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Optical Radiation Emissions from Selected Sources

Part I - Quartz Halogen and Fluorescent Lamps

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HHS Publication FDA 81-8136

Optical Radiation Emissions from Selected Sources

Part I - Quartz Halogen and Fluorescent Lamps

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WHO Collaborating Center for
Standardization of Protection
Against Nonionizing Radiations

October 1980

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Food and Drug Administration
Bureau of Radiological Health
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NOTICE

Because of the time period of this contract, there may have been modifications in lamp characteristics by the manufacturers after testing was completed. Therefore, users of this data may wish to contact the manufacturers regarding subsequent changes.

FOREWORD

The Bureau of Radiological Health develops and carries out a national program to control unnecessary human exposure to potentially hazardous ionizing and nonionizing radiations and to ensure the safe, efficacious use of such radiations. The Bureau publishes the results of its work in scientific journals and in its own technical reports.

These reports provide a mechanism for disseminating results of Bureau and contractor projects. They are distributed to Federal, State, and local governments; industry; hospitals; the medical profession; educators; researchers; libraries; professional and trade organizations; the press; and others. The reports are sold by the Government Printing Office and/or the National Technical Information Service.

The Bureau also makes its technical reports available to the World Health Organization. Under a memorandum of agreement between WHO and the Department of Health and Human Services, three WHO Collaborating Centers have been established within the Bureau of Radiological Health, FDA:

WHO Collaborating Center for Standardization of Protection Against Nonionizing Radiations;

WHO Collaborating Center for Training and General Tasks in Radiation Medicine; and

WHO Collaborating Center for Nuclear Medicine.

Please report errors or omissions to the Bureau. Your comments and requests for further information are also encouraged.

John C. Villforth
Director
Bureau of Radiological Health

PREFACE

The Bureau of Radiological Health, Food and Drug Administration, is responsible for implementing the Radiation Control for Health and Safety Act of 1968. Along with other responsibilities, the Act directs the Bureau to develop criteria and recommend standards to limit unnecessary or potentially hazardous radiation exposure from electronic products. In partial fulfillment of this responsibility, the Bureau is conducting a large scale screening of the optical radiations emitted from commonly used light sources. The material in this report and subsequent reports is provided to act strictly as an information source and as a basis for further investigation in those cases warranting such actions. For sunlamps and mercury vapor lamps, Bureau action has already been taken in the form of Performance Standards. The contents of this report are limited to data from quartz halogen and fluorescent lamps. Data from other types of sources will be presented in future publications.

Roger H. Schneider
Director
Division of Electronic Products

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ABSTRACT

Mohan, K., Ph.D., W. Knight, K.W. Chen, I. Lewin, Ph.D., and R. Heinisch. Optical Radiation Emissions from Selected Sources: Part I - Quartz Halogen and Fluorescent Lamps. HHS Publication (FDA) 81-8136 (October 1980).

Results of the first phase of a large scale screening of commonly used quartz halogen and fluorescent light sources are presented. Data reported include irradiance, illuminance, the effective irradiance (according to the American Conference of Governmental and Industrial Hygienists (ACGIH) Threshold Limit Values (TLV's) for radiation at wavelengths less than 315 nm), the time to exceed the ACGIH TLV, and spectral irradiance for each source that was measured. Also included is a detailed description of the spectroradiometer system developed to rapidly obtain the spectral data, a description of the test methods used, and an analysis of the uncertainties in the data. It is not the purpose of this report to perform a detailed hazard analysis of the spectral emissions from each of the sources described or to evaluate them for their efficacy in producing specific biological effects, since without consideration of the conditions of use many sources do not lend themselves to hazard analysis by the use of a simple weighting function.

OPTICAL RADIATION EMISSIONS FROM SELECTED SOURCES
PART I - QUARTZ HALOGEN AND FLUORESCENT LAMPS

1. INTRODUCTION

1.1 Background Information

The results presented in this report were obtained under a contract awarded by the Food and Drug Administration to the Environmental Research Laboratories of Scottsdale, Arizona, for a large-scale screening of commonly used light sources, using spectroradiometric and photometric techniques. The motivation behind the testing was multifold, and the sources that were chosen for measurement were in one of three categories:

a. Lamps for which Federal Standards have been enacted, such as sunlamps and mercury vapor lamps.

b. Lamps in which the Agency has specific interests and regulatory or voluntary mechanisms are being considered by the Agency to render them less hazardous. An example is UVA lamps used in psoriasis treatment.

c. General or specific purpose light sources used in applications involving general or occupational public exposure to assumed high levels of potentially hazardous radiation. This category includes sources such as stage lighting lamps, quartz halogen lamps and other illumination sources.

The scope of this evaluation covers only a selected number of sources. The parameters measured were those that characterize the emissions from optical radiation sources in the wavelength region from 200-1400 nanometers (nm), namely, spectral irradiance, radiance, illumination and irradiances in several specific wavelength intervals.

It should be noted, also, that the measurements presented in this report are not meant to be high-accuracy spectral measurements. The accuracies are represented by the uncertainty statement and are adequate for the biological hazard evaluation for which these data are meant to be used. The data obtained as part of this study are not meant to provide the sole measurement basis for Agency action, but are intended to indicate problem areas and are more of a screening mechanism than high-accuracy metrology. In congruence with this objective, the sources were not operated under standardized Illuminating Engineering Society recommended testing procedures. The electrical parameters and circuitry used were those that were recommended by the manufacturer for users of the lamp. Thus, we predict that the testing conditions were similar to typical use conditions of the sources. Exceptions were made in certain instances where it was necessary to vary from actual use conditions in order to get more meaningful information, or because simulation of the actual use conditions was not possible due to equipment constraints. This report contains data on some of the sources that have been measured. Data on other sources that have been, or will be measured, will be available at a later date.

1.2 Biological Implications

Since the purpose of examining emission data is to evaluate it in the light of biological effects, biological considerations are the rationale for the scope of this study.

The wavelength region was chosen to include the known action spectra of some bioeffects as well as the transmittances of the ocular media. The parameter spectral irradiance was chosen because it lends itself to further analysis through the use of weighting functions. Illuminance was chosen as a measure of the visual effectiveness of the source, and radiance was chosen since it allows for evaluation of retinal image intensities.

Light is perhaps regarded as the most innocuous of the electromagnetic radiations. A long-term human familiarity with it, however, does not render it totally harmless. Most sources that produce light (which, for semantic unambiguity will be a term used for radiant energy visually evaluated by humans) also produce other radiations, namely, ultraviolet radiations and infrared radiations. Figure 1.1 describes the region of our interest in the electromagnetic spectrum. The regions that are generally accepted as being responsible for a few specific biological effects are indicated.

Many biological effects of optical radiations are well known (1-4). Using the terminology of spectral categorization indicated in Figure 1.1, UVB and UVC radiations are known to cause photokeratitis. UVB radiations are primarily responsible for erythema. In addition, UV radiations can cause premature aging of the skin and can also cause skin cancer. It should be noted, however, that these effects are attributable to the radiation and can also be caused by sunlight since terrestrial sunlight contains both UVB and UVA radiations. Visible and infrared radiations also have hazard potential.

Optical radiations are also used for diagnostic and therapeutic purposes. In the case of noncoherent broad band optical radiations one of these applications is in the treatment of hyperbilirubinemia (jaundice) in newborn infants. Fluorescent lamps rich in emissions at the blue end of the visible spectrum are used in this application. The radiation causes a photodestruction and enhanced elimination of bilirubin in the blood and often eliminates the need for further complex procedures, such as an exchange transfusion.

Ultraviolet radiations are used in a variety of medical applications. The two more common treatments for psoriasis involve the use of UV radiations. One is the Goeckerman treatment in which coal tar and sunlight are used. Many dermatologists recommend the use of UVB radiation from sunlamps as an effective substitute for sunlight. The other treatment for psoriasis is the more recent Psoralen Ultra Violet A (PUVA) therapy in which a photosensitizing drug, Psoralen, is used with UVA radiation exposure to successfully control the disease.

The use of sunlamps for purposes of skin tanning is another example of the use of UV radiations. Based on the injury reports collected by the National Electronic Injury Surveillance System it has been estimated that 10,000 to 12,000 people are treated annually in hospital emergency rooms for injuries resulting from overexposure to sunlamps. These injuries involve primarily sunburn and photokeratitis. The Agency has published a Performance Standard (5) that requires certain features to be incorporated into sunlamp products. These features include a timer, restriction of the radiation in certain wavelength regions, protective goggles, and informational material that helps in safer use of the product.

UVA radiations are also used for curing dental restorative materials. One device intended for this use is described by Peterson et al. (6) and was the object of Agency action under the defective product provisions of PL 90-602, in 1975.

It is not the purpose of this report to perform a detailed hazard analysis of the spectral emissions from each of the sources described here or to evaluate them for their efficacy in producing specific biological effects. Definitive biological action spectra are not available for many of the biological effects described. Without consideration of the conditions of use, many sources do not lend themselves to hazard analysis by the use of a simple weighting function. The two biological parameters given in this report are illumination (or illuminance) which is a measure of the typical human visual effectiveness of the source, and a specifically weighted integral that uses a biological hazard weighting function for UV

radiation, recommended by the American Conference of Governmental and Industrial Hygenists (ACGIH) and the National Institute for Occupational Safety and Health (NIOSH) (7,3)

The ACGIH integral is described elsewhere in this report. Also described elsewhere and computed for each source, is the ACGIH time, which is the time in which the radiation from the source exceeds that recommended as the maximum daily occupational 8-hour exposure limit by ACGIH and NIOSH at the point of measurement. It should be noted that the use of this weighting scheme does not imply that the Bureau of Radiological Health considers it adequate to cover all possible biohazards from UV radiation. It is only one available weighting function and is designed to take into account primarily the erythemal and photokeratitis action spectra. Concerns regarding long-term effects including carcinogenesis are not addressed by this weighting function.

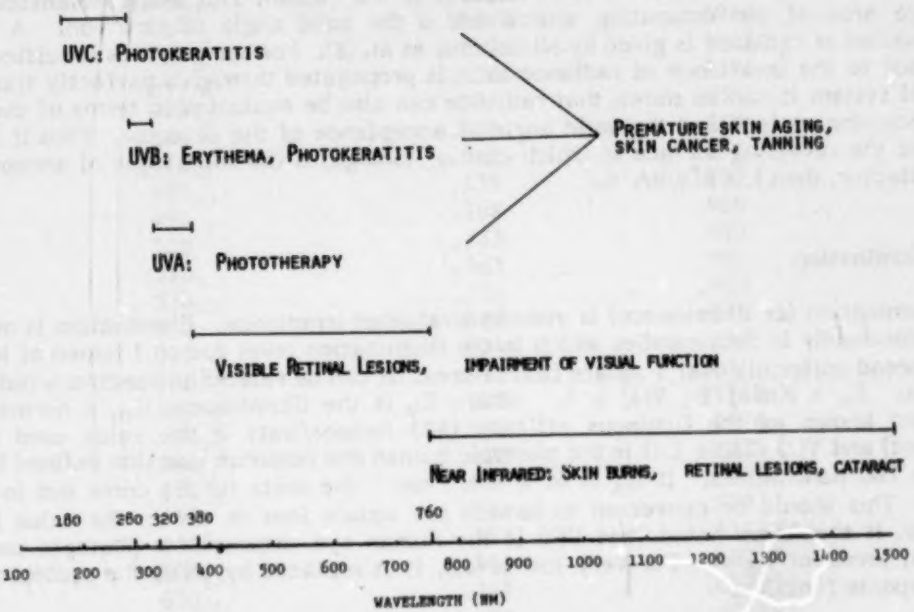

Figure 1.1. Some bioeffects of the electromagnetic spectrum selected portions.

2. PARAMETERS AND DEFINITIONS

The parameters that are measured or calculated for the sources tested under this program are the following:

2.1 Spectral Irradiance

Spectral irradiance is the radiant power incident upon a surface per unit surface area per unit wavelength. The symbol used is E_λ and the units are W cm^{-2} nm^{-1}. This can be stated as $E_\lambda = d^2\phi/d\lambda dA$ where ϕ is the radiant flux, λ the wavelength and A the surface area of the surface at which measurements are made.

2.2 Irradiance

Irradiance is the radiant power incident upon a surface per unit surface area, within a

specified wavelength region. If the wavelength region is the one between the wavelengths λ_1 and λ_2 then the irradiance is

$$E = \int_{\lambda_1}^{\lambda_2} E_\lambda \, d\lambda$$

where E_λ is the spectral irradiance and the units of irradiance are $W\ cm^{-2}$.

2.3 Radiance

The radiant power emanating from a surface per unit area of the emanating surface within a unit solid angle within a specified wavelength region is the radiance of the source in that wavelength region. The symbol used for radiance is L and it can be expressed as $L = d^2\phi/dA\, d\omega$ in units of $W\ cm^{-2}\ sr^{-1}$ where ϕ is the radiant flux being emanated, A the surface area of the emanating source and ω the solid angle of emission. A detailed explanation of radiance is given by Nicodemus et al. (8). For our purposes it suffices to say that due to the invariance of radiance as it is propagated through a perfectly transparent optical system it can be shown that radiance can also be evaluated in terms of the size of the receiving surface and the solid angle of acceptance of the detector. Thus if A' is the area of the receiving surface in which case ω' (omega) is the solid angle of acceptance of the detector, then $L = d^2\phi/dA'd\omega'$.

2.4 Illumination

Illumination (or illuminance) is visually evaluated irradiance. Illumination is measured most commonly in foot-candles which is the illumination level due to 1 lumen of luminous flux spread uniformly over 1 square foot of area. It can be related to spectral irradiance as follows: $E_v = Km \int E_\lambda V(\lambda)\, d\lambda$ where E_v is the illuminance, K_m a normalization constant known as the luminous efficacy (683 lumens/watt is the value used for this constant) and $V(\lambda)$ (Table 2.1) is the photopic human eye response function defined between 380 to 760 nanometers. If E_λ is in $W\ cm^{-2}\ nm^{-1}$ the units for E_v come out in lumens cm^{-2}. This should be converted to lumens per square foot to obtain the value in foot-candles. It should be noted that $V(\lambda)$ is the human eye response for photopic conditions (normal levels of light). For very low levels, it is replaced by $V'(\lambda)$, the scotopic human eye response function.

Illumination can be measured directly using a detector that has a $V(\lambda)$ response function or it can be calculated by mathematically weighting the spectral irradiance values of the source and integrating the products as shown in the above equation.

2.5 The ACGIH Integral and Time

The American Conference of Governmental and Industrial Hygienists (ACGIH) and the National Institute of Occupational Safety and Health (NIOSH) have recommended a hazard function for accurate ultraviolet radiation hazards. The ACGIH integral is defined as

$$E_{eff} = \int_{200}^{315} E_\lambda S(\lambda)\, d\lambda$$

where $S(\lambda)$ is the weighting function given in Table 2.2. This effective irradiance E_{eff}, is divided into the recommended 8-hour maximum daily exposure limit at 270 nm - which is 0.003 Joules cm^{-2} to yield a time in seconds which is the ACGIH time. Thus, Time (ACGIH) = $.003/E_{eff}$ seconds.

Table 2.1 Photopic, $V(\lambda)$, and scotopic, $V'(\lambda)$, spectral luminous efficiency values. (Unity at wavelength of maximum luminous efficacy.) (9)

Wavelength λ (nanometers)	Values	
	Photopic $V(\lambda)$	Scotopic $V'(\lambda)$
380	0.00004	0.000589
390	.00012	.002209
400	.0004	.00929
410	.0012	.03484
420	.0040	.0966
430	.0116	.1998
440	.023	.3281
450	.038	.455
460	.060	.567
470	.091	.676
480	.139	.793
490	.208	.904
500	.323	.982
510	.503	.997
520	.710	.935
530	.862	.811
540	.954	.650
550	.995	.481
560	.995	.3288
570	.952	.2076
580	.870	.1212
590	.757	.0655
600	.631	.03315
610	.503	.01593
620	.381	.00737
630	.265	.003335
640	.175	.001497
650	.107	.000677
660	.061	.0003129
670	.032	.0001480
680	.017	.0000715
690	.0082	.00003533
700	.0041	.00001780
710	.0021	.00000914
720	.00105	.00000478
730	.00052	.000002546
740	.00025	.000001379
750	.00012	.000000760
760	.00006	.000000425
770	.00003	.0000002413
780	.000015	.0000001390

Table 2.2. Total permissible daily 8-hour doses and relative spectral effectiveness of some selected monochromatic wavelengths (7)

Wavelength (nm)	Permissible 8-hour dose (mJ/cm^2)	Relative spectral effectiveness (Sλ)
200	100.0	0.03
210	40.0	0.075
220	25.0	0.12
230	16.0	0.19
240	10.0	0.30
250	7.0	0.43
254	6.0	0.50
260	4.6	0.65
270	3.0	1.00
280	3.4	0.88
290	4.7	0.64
300	10.0	0.30
305	50.0	0.06
310	200.0	0.015
315	1000.0	0.003

3. EXPERIMENTAL SETUP AND CHARACTERIZATION

3.1 The Spectroradiometer System

A fully automated spectroradiometer system has been constructed, with the capabilities for measuring spectral irradiance and spectral radiance under computer control.

3.1.1 Spectral irradiance measurements

The schematic diagram, Figure 3.1, indicates the basic layout of the components. A brief description of the schematic for spectral irradiance measurements is as follows:

The test source is positioned directly in front of a 6.45 cm^2 (1 inch square), white diffuse plaque, painted with Eastman 3080 paint. The test distance is variable from approximately 20 cm to 7 meters. The shortest test distance normally used is 50 cm. Because of the screening baffles used around the plaque and other equipment, which are designed to accept light only from a narrow angular range, a test distance of 100 cm is used for sources exceeding 25 cm in any direction.

A portion of the rays reflected from the plaque are incident upon a front-surface glass mirror. The parcel of reflected rays is then focused by a quartz lens on the prism predisperser entrance slit used on the entrance to the monochromator.

The chopper used in the ray path will be discussed later.

The predisperser (MacPherson type 608M1) causes the initial dispersion of rays which then enter the monochromator. The monochromator is a McPherson model 285, 0.5 meter double monochromator, equipped with a 600 grooves/mm diffraction grating with a blaze wavelength of 300 nm.

It was found experimentally that the best balance between wavelength separation and system sensitivity was obtained by exiting the rays after a single pass on the diffraction grating. Thus the system is essentially a double monochromator (predisperser and one reflection from the grating), although the capability exists for adaptation to a triple system by using a second pass on the grating if required.

Upon leaving the exit slit, the rays are incident either on a photomultiplier, used for UV, visible and infrared measurements up to approximately 950 nm, or by the insertion of a 90° prism, the rays are incident upon a lead sulphide photocell for measurements from 950 to 1400 nm.

The photomultiplier is an EMI 9684QB with external cooling to -30 °C using an EMI-Gencom Fact-50 forced air thermoelectric cooler. The photocell is Optoelectronics Model/OTC-225-8. The d.c. bias and supply for both sensors operate from batteries, which have been found to reduce noise problems.

Output from the photomultiplier or photocell is fed to a lock-in amplifier (Princeton Applied Research, Model 128A). The analog signal generated by the lock-in amplifier is fed to an analog to digital (A/D) converter and then to the central computer.

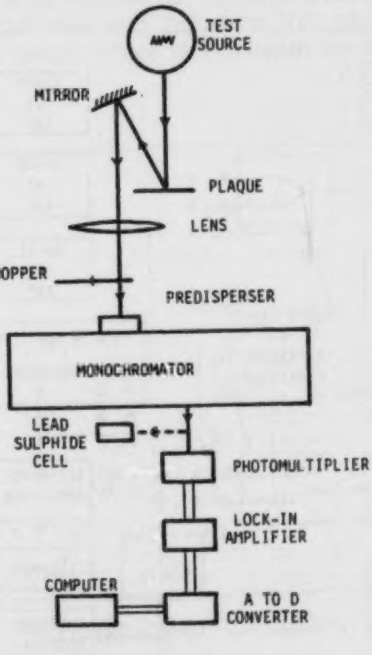

Figure 3.1. The spectro-radiometer system.

An expanded block diagram illustrating the system circuitry is shown in Figure 3.2. The lock-in amplifier is basically a phase sensitive a.c. voltmeter that compares the input signal against a reference signal, the latter being generated by the chopper photo-darlington (light emitting diode and photocell) sensing the slots on the chopper blade as shown in Figure 3.3. A voltage is generated by the darlington photocell when the chopper is transmitting radiation to it. The voltage is amplfied through an operational amplifier to the correct magnitude and applied to the lock-in amplifier. The rotation of the chopper blade opens and closes the signal to the darlington photocell at the same instant as the test source signal is chopped on and off to the monochromator, thus assuring phasing of the input and reference voltages to the lock-in amplifier. The amplifier produces a d.c. voltage proportional to that part of the input signal which is synchronous with, and in phase with, the reference signal. Comparison of these two signals occurs in an internal phase shift detector, and most unwanted signals and noise are eliminated to ground by filtering. Phase shift controls are provided for exact synchronization.

The interface amplifier-integrator shown in Figure 3.2 uses an operational amplifier as a voltage follower to produce the necessary high impedance, and a second operational amplifier to obtain a gain of 10. The gain is necessary for the 0-10 volt signal required by the analog-to-digital equipment, as the lock-in amplifier produces only 0-1 volt.

It should be noted that ground loops in this type of configuration are a matter of concern as they give erratic, nonstable voltages between outputs A and B (Fig. 3.2). For this reason, shields are grounded at one end only and do not allow the possibility for generation of a false current from induced a.c. flux in the vicinity.

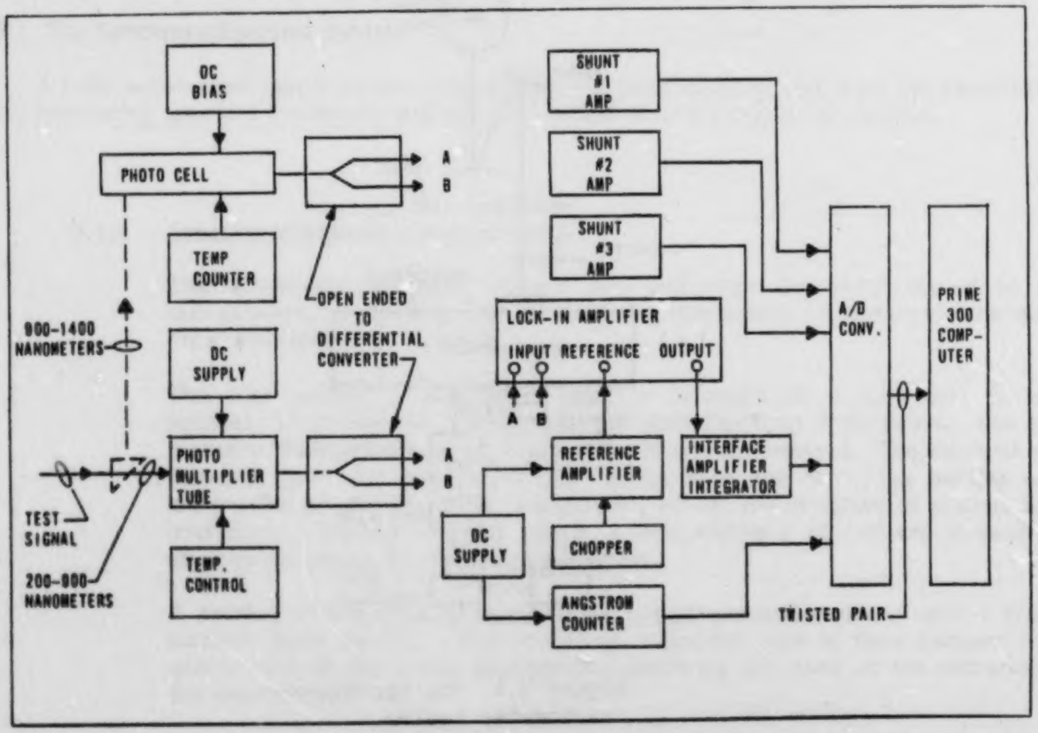

Figure 3.2. Circuitry of the spectroradiometer system.

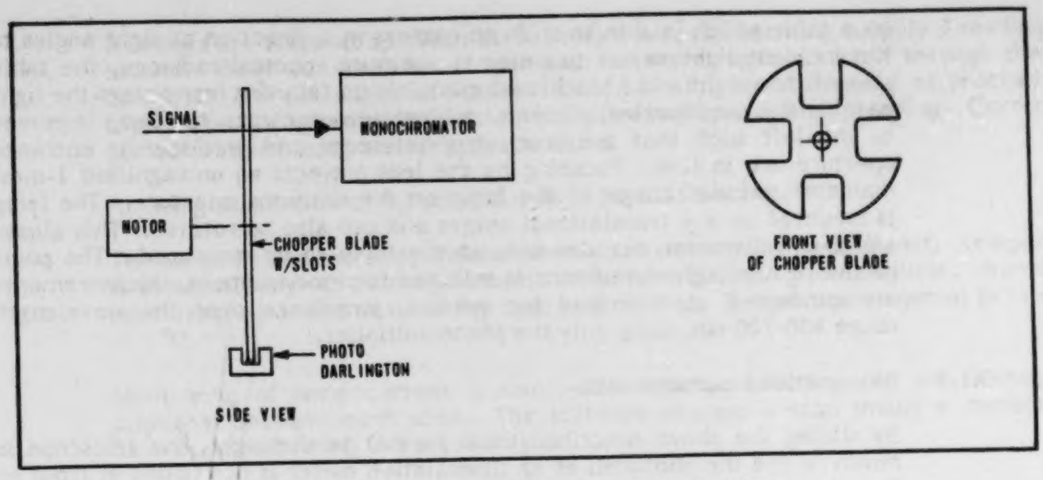

Figure 3.3. The light chopping system.

Monitoring of the test and standard lamp currents is achieved by the circuits similar to that shown in Figure 3.4. Factory calibrated d.c. shunts are used, and electronic monitoring of the shunts is achieved with the input signal amplified and connected to the computer via the A/D equipment.

Wavelength determination is achieved using another photo-darlington and slotted disc combination. The slotted disc is mechanically connected to the wavelength drive and thus rotates as the diffraction grating rotates. The passage of the slots on the disc between the photodiode and photocell performs a wavelength count, which is monitored by the computer.

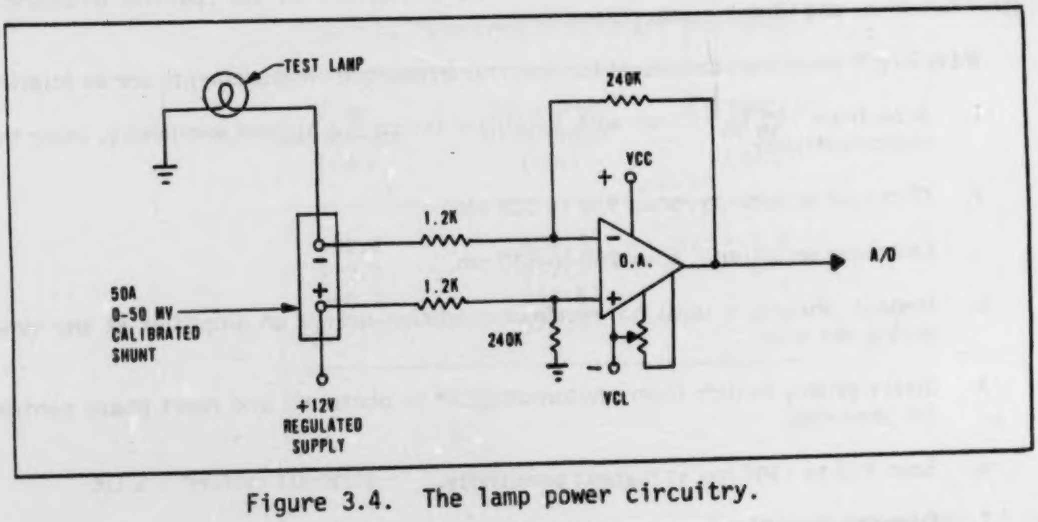

Figure 3.4. The lamp power circuitry.

3.1.2 Radiance measurements

The above discussion and Figure 3.1 cover the test setup for the measurement of spectral irradiance. The plaque, mirror and lens are situated

on a table which is able to slide on runners in a direction at right angles to the incident light rays. In order to measure spectral radiance, the table slides to the right and a black tube containing a focusing lens enters the light path to the predisperser. Prior to taking measurements, the lamp is moved to the left such that the test lamp, telescope and predisperser entrance aperture are in line. Focusing by the lens projects an unmagnified 1-mm-diameter circular image of the lamp on the entrance aperture. The lamp is mounted on x-y translational stages and can also be rotated. This allows any 1-mm-diameter circular area of the lamp to be measured. The point producing the highest radiance is selected for measurement. Measurements are conducted as described for spectral irradiance over the wavelength range 400-700 nm, using only the photomultiplier.

3.1.3 Illumination measurements

By sliding the above described table further to the right, the telescope is removed and the photocell of an illumination meter is positioned in front of the entrance aperture, at the same distance from the lamp as the distance from the lamp to plaque as used for spectral irradiance measurements. Two different meters are used, a Gamma Scientific model 820, or a United Detector Technology 40A Opto-Meter.

3.2 Measurement Procedures

The general measurement procedure is to run a daily calibration of working standards, followed by a test lamp. Three working standards are used, namely a deuterium arc lamp standard for spectral irradiance in the wavelength region 200 to 320 nanometers, a 1000 watt quartz halogen, Type DXW spectral irradiance standard for the wavelength region 250-1400 nm and a ribbon filament spectral radiance standard, all having been calibrated originally against NBS standards.

After calibrating the system using the working standards, typically six test lamps per day are measured. The procedure is as described in Section 3.1 for spectral irradiance, spectral radiance, and illumination, respectively.

Wavelength scanning procedures for spectral irradiance measurements are as follows:

1. Scan from 200 to 950 nm with amplifier set to the highest sensitivity, using the photomultiplier.
2. Decrease sensitivity, scan 950 to 200 nm.
3. Decrease sensitivity, scan 200 to 950 nm.
4. Repeat procedure until no overload condition occurs on amplifier at any time during the scan.
5. Insert prism, switch from photomultiplier to photocell and reset phase control for photocell.
6. Scan 950 to 1400 nm at highest sensitivity.
7. Decrease sensitivity and scan from 1400 to 950 nm.
8. Repeat procedure until no overload condition exists.

The equipment is then changed for spectral radiance measurements and a similar scanning procedure is performed for the wavelength range from 400 to 700 nm.

Readings are taken at approximately every 1 nm, representing roughly 5 readings per second. Both the amplifier output and the wavelength are read through the A/D converter and placed on computer file. As both cannot be read at precisely the same instant, the required correction is applied to the wavelength reading. Corrections are determined using wavelength standards.

An integration time of 0.3 second is used for all scanning.

Temperature and humidity measurements are made prior to each test. Temperature is automatically read through a computer channel using a thermocouple. Humidity is read using a normal wet and dry bulb hygrometer. Temperature control is to within ± 1 °C.

Monitoring of lamp current is also performed by the computer and readings are displayed between each scan. The software repeats a scan should a current drift have occurred during the previous scan.

3.3 System Characterization

3.3.1 Accuracy of wavelength scale

a. A Helium-Neon laser beam was directed into the system and a complete irradiance test was performed. The system located the He-Ne line at 632.7 ± 1 nm as opposed to its 'true' location of 632.8 nm.

b. Further evaluation was carried out using an Osram wavelength standard mercury lamp which was scanned from 380 nm to 720 nm. Results are given in Table 3.1.

Table 3.1 Wavelength accuracy test results

True wavelength (nm)	Measured wavelength (nm)	Wavelength error (nm)
404.7	405.3	+ 0.6
435.8	435.8	0
546.1	544.8	- 1.3
577.0	577.8	+ 0.8

3.3.2 System linearity

Linearity of the system was tested using the inverse square law. A system is regarded as being linear in response if its response changes in a constant proportion to changes in the level of radiation collected by the input optics. Results are given below for three wavelengths, showing the range of deviation from the true Inverse Square Law result (Table 3.2).

Table 3.2 Linearity test

Wavelength	Number of decades	Range of deviation from inverse square
365.5	3.4	± 1.6%
600	4.0	± 2.3%
900	1.5	± 1.9%

It should be noted that these figures contain not only deviations due to nonlinearity of the receptors but also to other parts of the system, such as the A/D equipment, since the entire system was used to gather the data.

3.3.3 Polarization

An uncertainty of less than 2 percent was estimated for this element for quartz halogen lamps. No actual testing was performed.

3.3.4 Differential between time of calibration and time of test

Minor changes have been determined associated with the time of day, estimated at no greater than 1 percent.

3.3.5 Source to plaque distance

In the case of small lamps such as quartz halogen lamps, this distance is being measured to within 0.5 mm and therefore contributes a maximum error of about 0.2 percent in spectral irradiance and illumination measurements based on a test distance of 50 cm. However, for larger lamps it is more difficult to measure the center of the source and larger uncertainties could result.

3.3.6 Stability and reproducibility

Numerous tests have been run using deuterium, quartz halogen, and spectral ribbon filament lamps to determine the reproducibility of results. It has been found that results are stable within ± 2 percent for repeated complete disassembly and reassembly of the test lamp setup. Since part of this instability is due to the test lamp, the measurement system should be stable within less than ± 2 percent.

3.3.7 Sensitivity

The sensitivity of a system is the lowest level of spectral irradiance that it can measure. Sensitivity varies throughout the wavelength range. The system was designed to provide the following sensitivity, which was checked using appropriate sources. The values given in Table 3.3 summarize the general sensitivity:

Table 3.3 System sensitivity

Wavelength region	Sensitivity (watts cm^{-2} nm^{-1})
200-250 nm	10^{-8}
250-800 nm	10^{-9}
800-1400 nm	10^{-6}

Monitoring of all testing operations is performed using a 900 band CRT display terminal at the spectroradiometer site.

4. DATA REDUCTION

The spectral irradiance information is obtained as an instrument response in volts. The wavelength scale information is obtained digitally and necessary correction factors are applied to it. The signal representing the spectral irradiance information has to be multiplied by appropriate calibration factors in order to be presented in absolute units.

Instrument calibration is performed on a daily basis using the working standard lamps: a deuterium standard of spectral irradiance, a quartz halogen standard of spectral irradiance, and a radiance standard. During operation of these standard lamps, the instrument response at approximately 1 nanometer intervals from 200-1400 nanometers for spectral irradiance, and 400-700 nanometers for radiance is recorded. These data are in volts. Since these lamps have calibrated spectral irradiance and spectral radiance values associated with them, a set of calibration factors can be generated. These calibration factors are stored on magnetic discs. Thus there is a separate calibration curve available for each standard lamp. Since the wavelength region in which the quartz halogen lamp standard of spectral irradiance is calibrated is 250 to 1400 nm and the wavelength region for the deuterium standard of spectral irradiance is 200 to 350 nm, the calibration curves obtained from these two standards overlap. These two calibration curves are combined as follows: In the wavelength region 200-250 nm the calibration factors obtained from the deuterium lamps are used; in the region 350-1400 nm the calibration factors obtained from the quartz halogen lamp are used and in the region 250 to 350 nm the calibration factors $C\lambda$ are generated by

$$C\lambda = (1-X)\, C_{D2.\lambda} + X C_{QH.\lambda}$$

where $C\lambda$ = Calibration factor used at wavelength λ

$C_{D2.\lambda}$ = calibration factor at wavelength λ obtained from the deuterium standard

$C_{QH.\lambda}$ = calibration factor at wavelength λ obtained from the qartz halogen standard

and $X = (\lambda-250)/100$

A similar procedure is used for the calibration of the system using a standard of spectral radiance.

The test lamps are then measured using the calibrated spectroradiometer system. The raw data obtained for the spectral irradiance and radiance of each source are in arbitrary units. These are recorded on magnetic discs and multiplied by the calibration factors to yield the spectral irradiance values in absolute units.

The spectral irradiance values are then run through another computer program that performs the integrations and weightings and provides all the calculated parameters. A graphical plot of the spectral irradiance values is obtained along with a summary of the parameters.

The integration required to obtain the irradiance values is performed using the Trapezoidal Rule

$$\int_{\lambda=\lambda_1}^{\lambda_2} E_\lambda\, c\,. = h(\tfrac{1}{2} E_{\lambda 1} + E_{\lambda 1+h} + E_{\lambda 1+2h} + \text{-----} E_{\lambda 2-h} + \tfrac{1}{2} E_{\lambda 2})$$

where h is the interval width, E_λ is the spectral irradiance at wavelength λ, and λ_1 and λ_2 represent the boundaries of the wavelength region over which the integration is being performed.

5. RESULTS

5.1 Results

Data received by the Bureau of Radiological Health from the Environmental Research Laboratories were entered into a computer for further processing. This data consisted of spectral irradiance values, measured illuminance values, radiance values, and general lamp information. Upon completion of the previously discussed calculations a data summary was produced for each lamp. Information contained in the summary consists of lamp type, time and date of the test, ambient temperature, test distance, lamp identification number, operating current or voltage, a calculated illumination value, a radiance value, the ACGIH integral and time, and irradiance values for up to five wavelength bands. Lamp voltage values are given for a.c. unless specified otherwise in the remarks section of the summary.

Also produced for each lamp was a plot of spectral irradiance as a function of wavelength. Areas of discontinuity on the plots occur when the spectral irradiance value at a series of wavelengths is below the detector sensitivity at those wavelengths.

For some of the lamps, a printout of spectral irradiance values at 10 nm intervals was produced. Values were interpolated from the raw data. If the spectral irradiance data for a given wavelength was below the detector sensitivity, asterisks were printed and note was made of the missing value(s).

Appendix A contains the spectral irradiance plots and other emission data for 51 quartz halogen and 29 fluorescent lamps.

5.2 Uncertainties

Estimation of the uncertainties associated with these measurements was performed in two ways. One was to linearly add up the uncertainties associated with different aspects of lamp and spectroradiometer performance. These include uncertainties due to lack of linearity, system instability, stray light, polarization, errors in measurement of source to detector distance, inaccuracies in the wavelength scale of the spectroradiometer, inherent instabilities in the source, and uncertainties of the standard lamp used. Most of these uncertainty components are based on system characterization. The other way to estimate uncertainties is through direct intercomparisons with the National Bureau of Standards using intercomparison lamps of similar and dissimilar spectral power distributions. For the spectral measurements the overall uncertainties are given in the following table, for the wavelength regions covered.

Source of uncertainty	quartz halogen source	Fluorescent lamps
Linearity	< 2%	3%
Polarization	2.5%	6% (est.)
System instability	< 2%	< 2%
Lamp instability	0.5%	3%
Distance Measurement	0.2%	2% (est.)
Stray light	Not measurable	Not measurable
Wavelength scale inaccuracies	0.5%	1.5%
Uncertainties in the working standard	5%	5%
Total	12.7%	22.5%

Several intercomparisons were performed between ERL, BRH and NBS. The agreements were within the estimated uncertainties. The estimated uncertainties for quartz halogen lamps appeared to be very conservative since much better agreements were obtained at most of the wavelengths, during these intercomparisons.

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[illegible]

Linearity	[illegible]	[illegible]
Photometric [illegible]	[illegible]	[illegible]
System variability	[illegible]	[illegible]
Lamp instability	[illegible]	[illegible]
Diffuse [illegible]	[illegible]	[illegible]
Stray light	Not measurable	Not measurable
[illegible]	[illegible]	[illegible]
Uncertainties in the working standard	[illegible]	[illegible]

[illegible]

Several intercomparisons were performed between [illegible] and NBS. The agreements were within the estimated uncertainties. [illegible] quartz halogen [illegible] agreements were obtained at [illegible] wavelengths, during [illegible].

REFERENCES

1. [illegible] A Review of [illegible] NIOSH Publication (NIOSH) 73-[illegible] (1973).

2. [illegible]

3. Criteria for a Recommended Standard: Occupational Exposure to Ultraviolet Radiation. [illegible] HSM 73-11009 (1972).

4. [illegible] NIOSH Publication (NIOSH) 76-[illegible]

5. [illegible]

6. [illegible] NIOSH Publication (NIOSH) 75-[illegible]

7. Threshold Limit Values for Physical Agents [illegible] American Conference of Governmental Industrial Hygienists [illegible] Chemical Substances [illegible] 1972.

8. [illegible]

9. [illegible]

APPENDIX A

LAMP TYPE: FCV 1000W.

DATE TESTED: DEC 20, 1977

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 947.7 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.9582E 07 UW CM**-2SR**-1

I (ACGIH) = 0.3085E-05 W CM**-2

TIME (ACGIH) = 0.9725E+03 SECONDS

REMARKS:

VOLTAGE IN VDC

QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

SAMPLE NUMBER: 0001

TIME OF DAY: 83

IRRADIANCES:

E (200-260) = 0.2713E-06 W CM**-2

E (260-320) = 0.9788E-05 W CM**-2

E (320-400) = 0.1193E-03 W CM**-2

E (400-700) = 0.3926E-02 W CM**-2

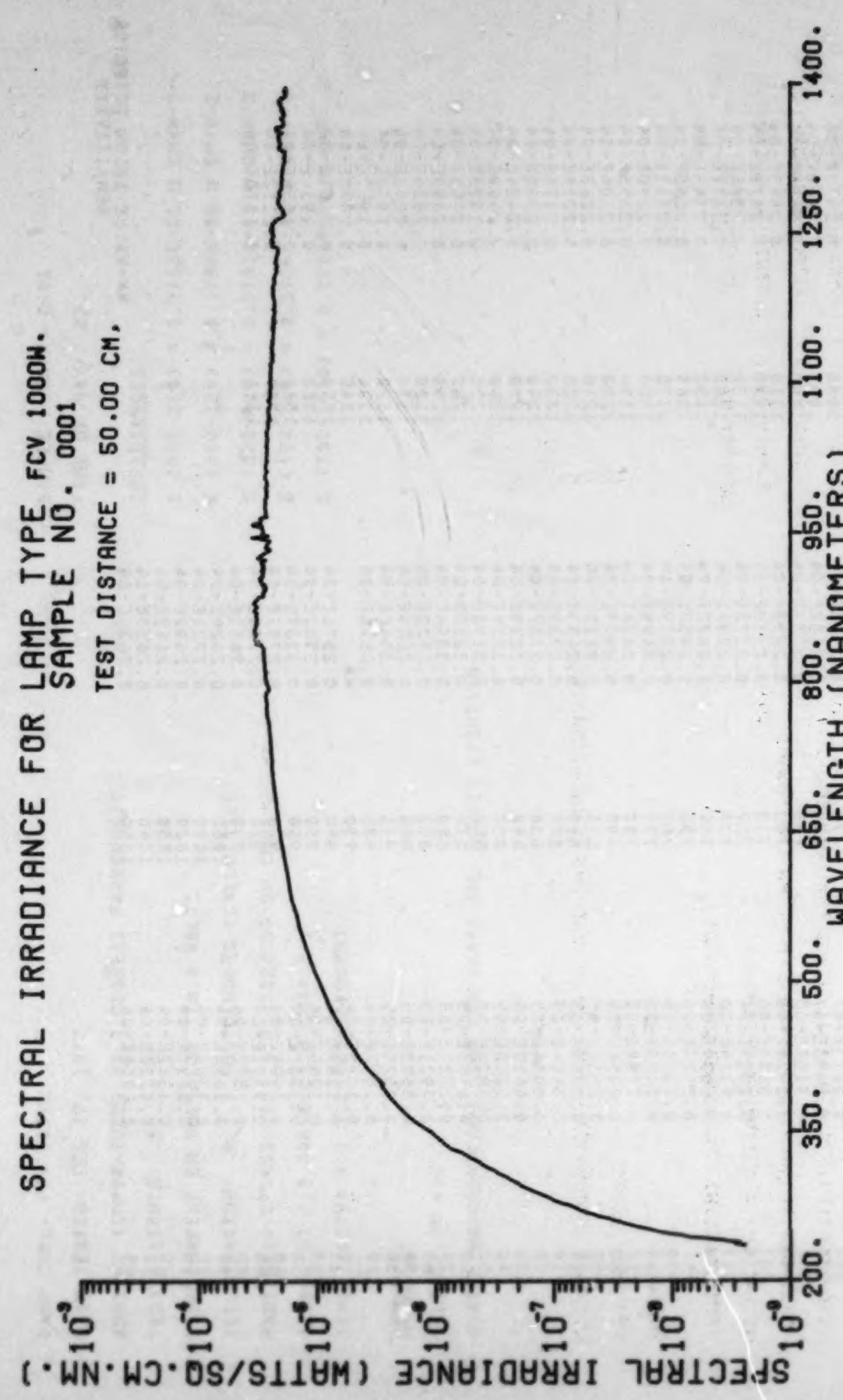
E (700-1400) = 0.1738E-01 W CM**-2

SAMPLE NUMBER 0001
TEST DISTANCE 50.00 CM.

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE FCV 1000W.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
240	0.3459E-08	650	0.2018E-04	1060	0.2598E-04
250	0.1312E-07	660	0.2074E-04	1070	0.2569E-04
260	0.2813E-07	670	0.2126E-04	1080	0.2477E-04
270	0.5458E-07	680	0.2180E-04	1090	0.2450E-04
280	0.9163E-07	690	0.2233E-04	1100	0.2455E-04
290	0.1424E-06	700	0.2293E-04	1110	0.2445E-04
300	0.2094E-06	710	0.2330E-04	1120	0.2476E-04
310	0.2984E-06	720	0.2371E-04	1130	0.2366E-04
320	0.4164E-06	730	0.2397E-04	1140	0.2377E-04
330	0.6004E-06	740	0.2422E-04	1150	0.2341E-04
340	0.8413E-06	750	0.2457E-04	1160	0.2355E-04
350	0.1061E-05	760	0.2509E-04	1170	0.2303E-04
360	0.1429E-05	770	0.2604E-04	1180	0.2290E-04
370	0.1797E-05	780	0.2606E-04	1190	0.2355E-04
380	0.2158E-05	790	0.2659E-04	1200	0.2304E-04
390	0.2538E-05	800	0.2612E-04	1210	0.2263E-04
400	0.2789E-05	810	0.2689E-04	1220	0.2216E-04
410	0.3404E-05	820	0.2739E-04	1230	0.2174E-04
420	0.4014E-05	830	0.2787E-04	1240	0.2390E-04
430	0.4610E-05	840	0.3219E-04	1250	0.2424E-04
440	0.5288E-05	850	0.3238E-04	1260	0.2400E-04
450	0.5836E-05	860	0.3198E-04	1270	0.1923E-04
460	0.6463E-05	870	0.3210E-04	1280	0.2145E-04
470	0.7221E-05	880	0.3394E-04	1290	0.2099E-04
480	0.7921E-05	890	0.2822E-04	1300	0.2034E-04
490	0.8603E-05	900	0.2884E-04	1310	0.2003E-04
500	0.9324E-05	910	0.2840E-04	1320	0.1933E-04
510	0.1017E-04	920	0.2876E-04	1330	0.1917E-04
520	0.1095E-04	930	**	1340	0.2078E-04
530	0.1169E-04	940	0.2576E-04	1350	0.2101E-04
540	0.1240E-04	950	0.2902E-04	1360	0.1934E-04
550	0.1332E-04	960	0.3237E-04	1370	0.1934E-04
560	0.1404E-04	970	0.2707E-04	1380	0.2112E-04
570	0.1471E-04	980	0.2720E-04	1390	0.1878E-04
580	0.1572E-04	990	0.2653E-04		
590	0.1645E-04	1000	0.2626E-04		
600	0.1701E-04	1010	0.2701E-04		
610	0.1757E-04	1020	0.2697E-04		
620	0.1827E-04	1030	0.2642E-04		
630	0.1890E-04	1040	0.2655E-04		
640	0.1954E-04	1050	0.2639E-04		

**-VALUE BELOW DETECTOR SENSITIVITY


SPECTRAL IRRADIANCE FOR LAMP TYPE FCV 1000W.
SAMPLE NO. 0001
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10⁻³
10⁻⁴
10⁻⁵
10⁻⁶
10⁻⁷
10⁻⁸
10⁻⁹
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: FCV 1000W.

DATE TESTED: DEC 20, 1977

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 937.9 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.9657E 07 UW CM**-2SR**-1

I (ACGIH) = 0.3397E-05 W CM**-2

TIME (ACGIH) = 0.8831E+03 SECONDS

SAMPLE NUMBER: 0002

TIME OF DAY: 1027

IRRADIANCES:

E (200-260) = 0.2982E-06 W CM**-2

E (260-320) = 0.1056E-04 W CM**-2

E (320-400) = 0.1215E-03 W CM**-2

E (400-700) = 0.3891E-02 W CM**-2

E (700-1400) = 0.1735E-01 W CM**-2

REMARKS:

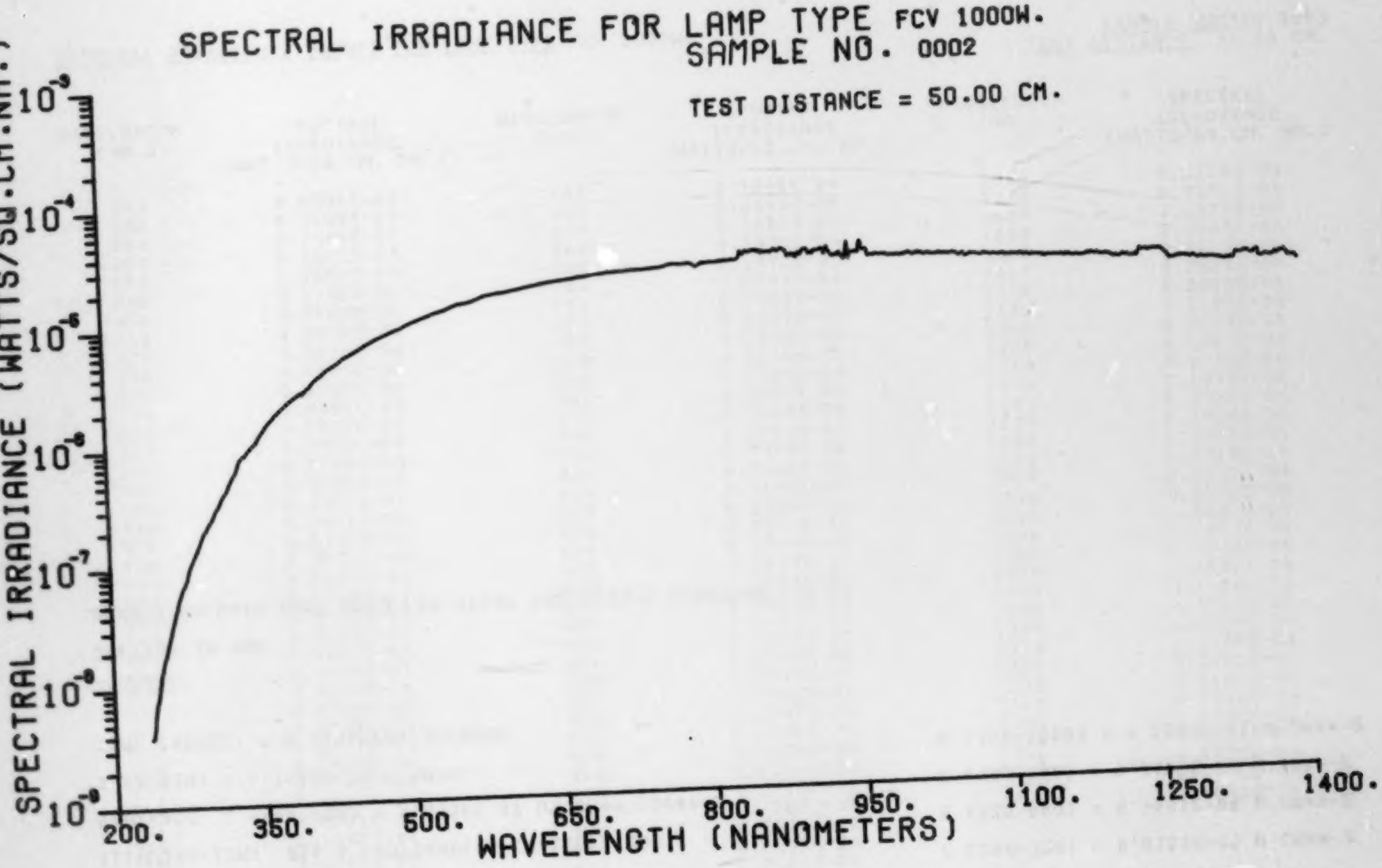
VOLTAGE IN VDC

QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE FCV 1:00W.

SAMPLE NUMBER 0002
TEST DISTANCE 50.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
240	0.5019E-08	650	[illegible]004E-04	1060	0.2553E-04
250	0.1490E-07	660	[illegible]2060E-04	1070	0.2559E-04
260	0.3048E-07	670	[illegible]2107E-04	1080	0.2504E-04
270	0.6040E-07	680	[illegible].2160E-04	1090	0.2480E-04
280	0.1010E-06	690	[illegible].2213E-04	1100	0.2483E-04
290	0.1542E-06	700	0.2270E-04	1110	0.2448E-04
300	0.2257E-06	710	0.2302E-04	1120	0.2480E-04
310	0.3171E-06	720	0.2339E-04	1130	0.2395E-04
320	0.4461E-06	730	0.2369E-04	1140	0.2387E-04
330	0.6520E-06	740	0.2387E-04	1150	0.2363E-04
340	0.8881E-06	750	0.2417E-04	1160	0.2370E-04
350	0.1088E-05	760	0.2451E-04	1170	0.2321E-04
360	0.1464E-05	770	0.2589E-04	1180	0.2298E-04
370	0.1818E-05	780	0.2563E-04	1190	0.2366E-04
380	0.2177E-05	790	0.2585E-04	1200	0.2303E-04
390	0.2543E-05	800	0.2571E-04	1210	0.2265E-04
400	0.2788E-05	810	0.2607E-04	1220	0.2207E-04
410	0.3401E-05	820	0.2643E-04	1230	0.2181E-04
420	0.4010E-05	830	0.2696E-04	1240	0.2447E-04
430	0.4596E-05	840	0.3079E-04	1250	0.2459E-04
440	0.5235E-05	850	0.3133E-04	1260	0.2443E-04
450	0.5790E-05	860	0.3049E-04	1270	0.2038E-04
460	0.6454E-05	870	0.3032E-04	1280	0.2117E-04
470	0.7191E-05	880	0.3239E-04	1290	0.2061E-04
480	0.7879E-05	890	0.2840E-04	1300	0.2030E-04
490	0.8565E-05	900	0.2902E-04	1310	0.2012E-04
500	0.9180E-05	910	0.2929E-04	1320	0.1952E-04
510	0.1008E-04	920	0.3125E-04	1330	0.1956E-04
520	0.1086E-04	930	0.2790E-04	1340	0.2132E-04
530	0.1163E-04	940	0.2781E-04	1350	0.2118E-04
540	0.1229E-04	950	0.2885E-04	1360	0.1960E-04
550	0.1323E-04	960	0.3414E-04	1370	0.1980E-04
560	0.1393E-04	970	0.2688E-04	1380	0.2130E-04
570	0.1445E-04	980	0.2711E-04	1390	0.1939E-04
580	0.1555E-04	990	0.2644E-04		
590	0.1630E-04	1000	0.2635E-04		
600	0.1685E-04	1010	0.2696E-04		
610	0.1740E-04	1020	0.2688E-04		
620	0.1806E-04	1030	0.2628E-04		
630	0.1873E-04	1040	0.2632E-04		
640	0.1941E-04	1050	0.2620E-04		


SPECTRAL IRRADIANCE FOR LAMP TYPE FCV 1000W.
SAMPLE NO. 0002
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10-3
10-4
10-5
10-6
10-7
10-8
10-9
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: FCV 1000W.

DATE TESTED: DEC 20, 1977

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 816.6 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.8356E 07 UW CM**-2SR**-1

I (ACGIH) = 0.2645E-05 W CM**-2

TIME (ACGIH) = 0.1134E+04 SECONDS

SAMPLE NUMBER: 0003

TIME OF DAY: 1228

IRRADIANCES:

E (200-260) = 0.2411E-06 W CM**-2

E (260-320) = 0.8150E-05 W CM**-2

E (320-400) = 0.9681E-04 W CM**-2

E (400-700) = 0.3402E-02 W CM**-2

E (700-1400) = 0.1500E-01 W CM**-2

REMARKS:

VOLTAGE IN VDC

QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

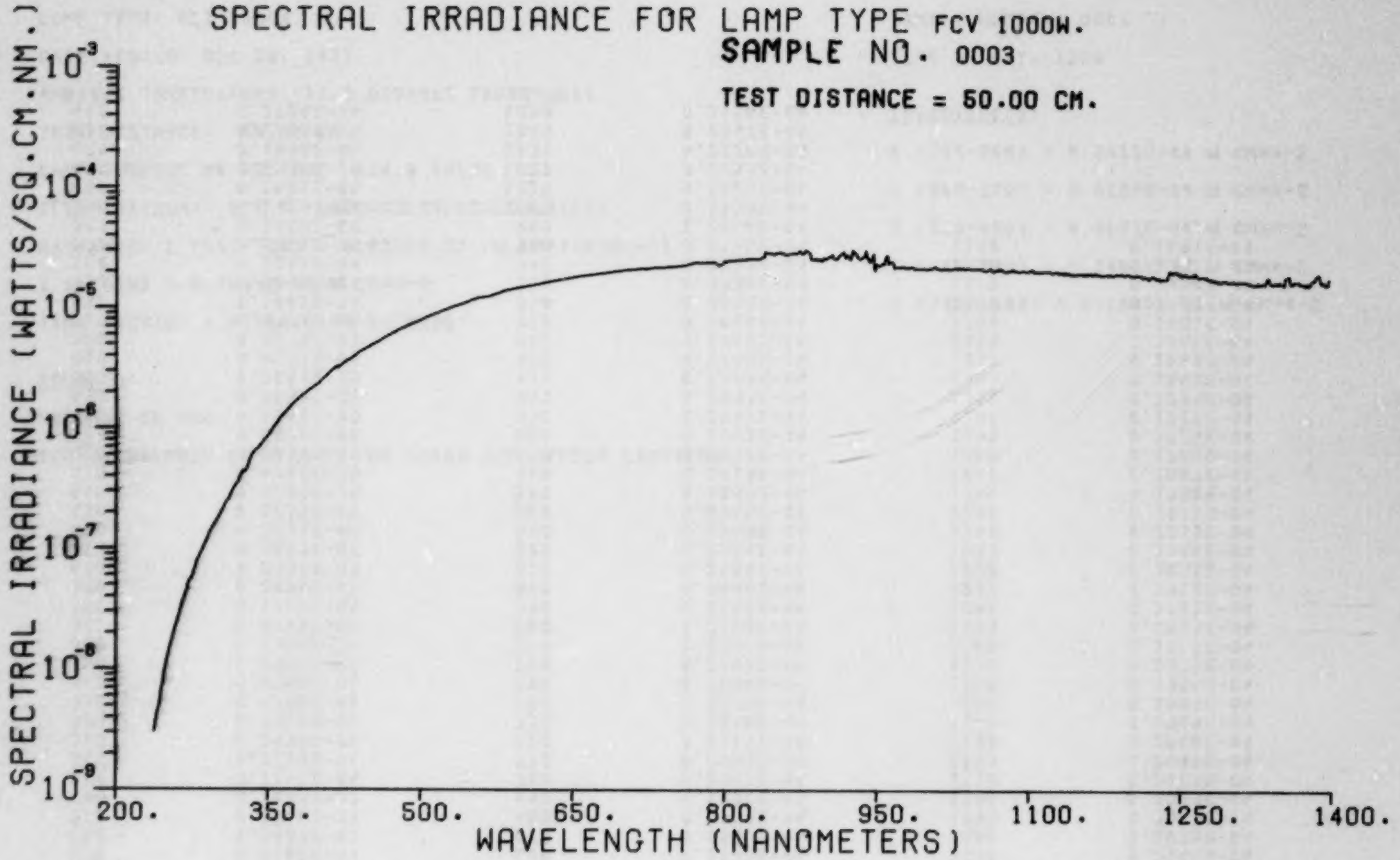
SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE FCV 1000W.

SAMPLE NUMBER 0003
TEST DISTANCE 50.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
240	0.4000E-08	650	0.1786E-04	1060	0.2124E-04
250	0.1160E-07	660	0.1843E-04	1070	0.2141E-04
260	0.2407E-07	670	0.1887E-04	1080	0.2075E-04
270	0.4566E-07	680	0.1939E-04	1090	0.2043E-04
280	0.7884E-07	690	0.1992E-04	1100	0.2059E-04
290	0.1198E-06	700	0.2047E-04	1110	0.2029E-04
300	0.1762E-06	710	0.2083E-04	1120	0.2065E-04
310	0.2498E-06	720	0.2119E-04	1130	0.2006E-04
320	0.3516E-06	730	0.2148E-04	1140	0.1969E-04
330	0.4795E-06	740	0.2170E-04	1150	0.1969E-04
340	0.6768E-06	750	0.2204E-04	1160	0.1984E-04
350	0.8551E-06	760	0.2247E-04	1170	0.1935E-04
360	0.1156E-05	770	0.2367E-04	1180	0.1948E-04
370	0.1448E-05	780	0.2360E-04	1190	0.1959E-04
380	0.1748E-05	790	0.2392E-04	1200	0.1911E-04
390	0.2056E-05	800	0.2440E-04	1210	0.1910E-04
400	0.2357E-05	810	0.2484E-04	1220	0.1835E-04
410	0.2872E-05	820	0.2524E-04	1230	0.1786E-04
420	0.3231E-05	830	0.2569E-04	1240	0.2035E-04
430	0.3735E-05	840	0.2945E-04	1250	0.1971E-04
440	0.4289E-05	850	0.2839E-04	1260	0.1938E-04
450	0.4760E-05	860	0.2813E-04	1270	0.1887E-04
460	0.5319E-05	870	0.2837E-04	1280	0.1780E-04
470	0.5976E-05	880	0.3043E-04	1290	0.1724E-04
480	0.6640E-05	890	0.2537E-04	1300	0.1729E-04
490	0.7255E-05	900	0.2593E-04	1310	0.1709E-04
500	0.7849E-05	910	0.2579E-04	1320	0.1640E-04
510	0.8579E-05	920	0.2742E-04	1330	0.1665E-04
520	0.9275E-05	930	0.2749E-04	1340	0.1666E-04
530	0.9971E-05	940	0.2666E-04	1350	0.1681E-04
540	0.1062E-04	950	0.2308E-04	1360	0.1661E-04
550	0.1146E-04	960	0.2730E-04	1370	0.1658E-04
560	0.1211E-04	970	0.2213E-04	1380	0.1772E-04
570	0.1261E-04	980	0.2188E-04	1390	0.1691E-04
580	0.1358E-04	990	0.2146E-04		
590	0.1425E-04	1000	0.2139E-04		
600	0.1481E-04	1010	0.2166E-04		
610	0.1536E-04	1020	0.2153E-04		
620	0.1598E-04	1030	0.2170E-04		
630	0.1663E-04	1040	0.2167E-04		
640	0.1724E-04	1050	0.2136E-04		

SPECTRAL IRRADIANCE FOR LAMP TYPE FCV 1000W.
SAMPLE NO. 0003

TEST DISTANCE = 50.00 CM.



LAMP TYPE: DSF 1500W.

DATE TESTED: JAN 11, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 286.9 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1756E 07 UW CM**-2SR**-1

I (ACGIH) = 0.2331E-07 W CM**-2

TIME (ACGIH) = 0.1287E+06 SECONDS

<u>REMARKS</u>:

QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

SAMPLE NUMBER: 0004

TIME OF DAY: 815

<u>IRRADIANCES</u>:

E (260-320) = 0.5148E-06 W CM**-2

E (320-400) = 0.3173E-04 W CM**-2

E (400-700) = 0.1207E-02 W CM**-2

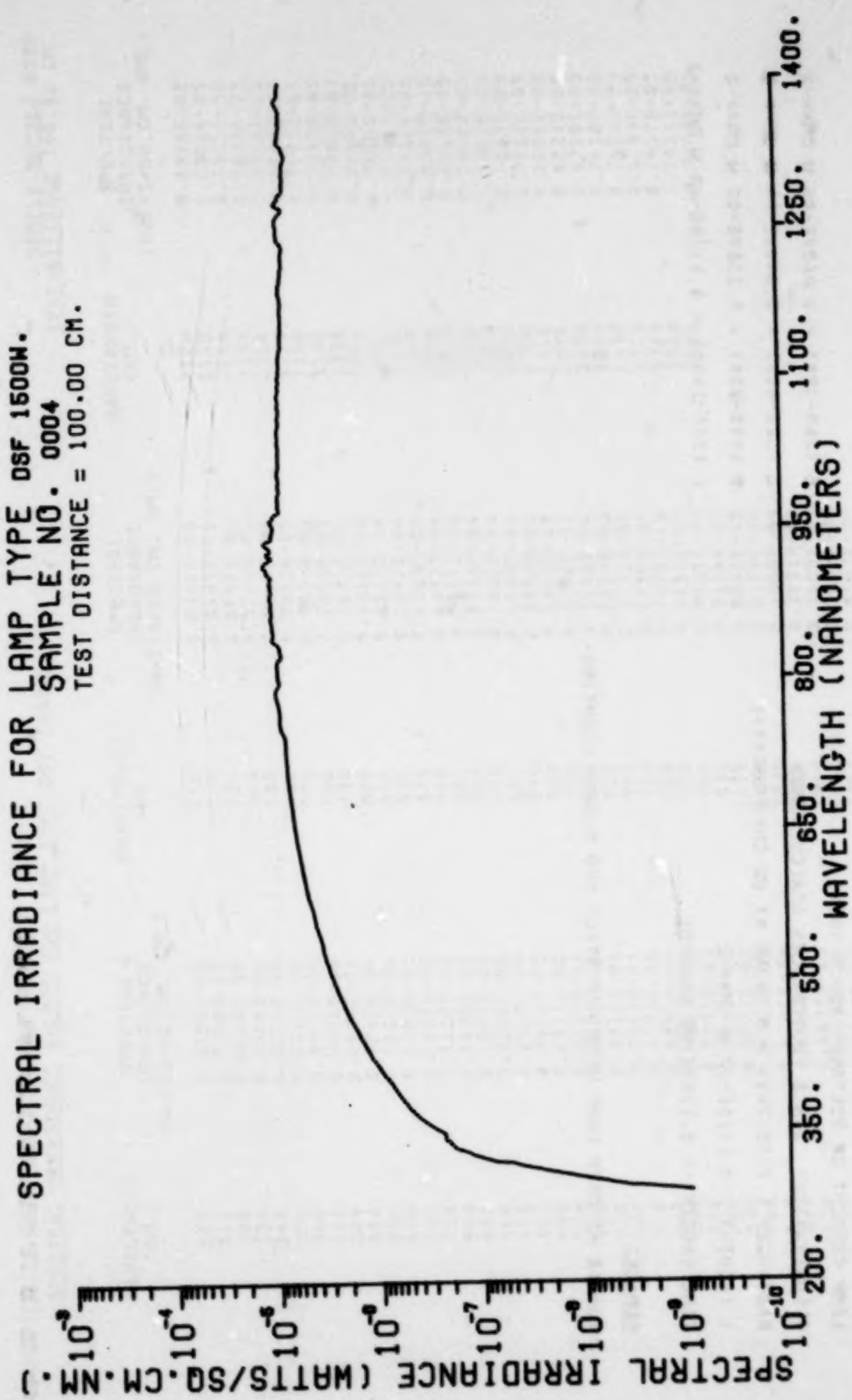
E (700-1400) = 0.5895E-02 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE DSF 1500W.

SAMPLE NUMBER 0004
TEST DISTANCE 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
290	0.8724E-09	700	0.7398E-05	1110	0.8112E-05
300	0.6163E-08	710	0.7501E-05	1120	0.8102E-05
310	0.2250E-07	720	0.7663E-05	1130	0.7818E-05
320	0.7757E-07	730	0.7774E-05	1140	0.7706E-05
330	0.1475E-06	740	0.7794E-05	1150	0.7619E-05
340	0.2187E-06	750	**	1160	0.7616E-05
350	0.2576E-06	760	0.8806E-05	1170	0.7651E-05
360	0.3715E-06	770	0.8816E-05	1180	0.7677E-05
370	0.4818E-06	780	0.9253E-05	1190	0.7842E-05
380	0.5880E-06	790	0.9596E-05	1200	0.7598E-05
390	0.6962E-06	800	0.8922E-05	1210	0.7420E-05
400	0.8047E-06	810	0.9145E-05	1220	0.7347E-05
410	0.9676E-06	820	0.9034E-05	1230	0.7162E-05
420	0.1129E-05	830	0.8643E-05	1240	0.8110E-05
430	0.1303E-05	840	0.1017E-04	1250	0.8139E-05
440	0.1490E-05	850	0.1011E-04	1260	0.8256E-05
450	0.1661E-05	860	0.1046E-04	1270	0.7185E-05
460	0.1884E-05	870	0.1038E-04	1280	0.7778E-05
470	0.2116E-05	880	0.1057E-04	1290	0.6934E-05
480	0.2338E-05	890	0.1051E-04	1300	0.6868E-05
490	0.2574E-05	900	0.1057E-04	1310	0.6889E-05
500	0.2801E-05	910	0.1149E-04	1320	0.6591E-05
510	0.3045E-05	920	0.1077E-04	1330	0.6889E-05
520	0.3299E-05	930	0.1044E-04	1340	0.7602E-05
530	0.3544E-05	940	0.1056E-04	1350	0.7333E-05
540	0.3666E-05	950	0.9796E-05	1360	0.7277E-05
550	0.3938E-05	960	0.1023E-04	1370	0.7350E-05
560	0.4216E-05	970	0.8450E-05	1380	0.7922E-05
570	0.4422E-05	980	0.8610E-05	1390	0.7418E-05
580	0.4718E-05	990	0.8390E-05		
590	0.4979E-05	1000	0.8421E-05		
600	0.5204E-05	1010	0.8575E-05		
610	0.5472E-05	1020	0.8417E-05		
620	0.5697E-05	1030	0.8398E-05		
630	0.5933E-05	1040	0.8465E-05		
640	0.6184E-05	1050	0.8566E-05		
650	0.6405E-05	1060	0.8457E-05		
660	0.6598E-05	1070	0.8270E-05		
670	0.6778E-05	1080	0.8364E-05		
680	0.6988E-05	1090	0.8225E-05		
690	0.7164E-05	1100	0.8238E-05		

**-VALUE BELOW DETECTOR SENSITIVITY


SPECTRAL IRRADIANCE FOR LAMP TYPE DSF 1500W.
SAMPLE NO. 0004
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10-3
10-4
10-5
10-6
10-7
10-8
10-9
10-10
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: DSF 1500W.

DATE TESTED: JAN 11, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 328.8 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1629E 07 UW CM**-2SR**-1

I (ACGIH) = 0.1710E-07 W CM**-2

TIME (ACGIH) = 0.1755E+06 SECONDS

<ins>REMARKS</ins>:

QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

SAMPLE NUMBER: 0005

TIME OF DAY: 1022

<ins>IRRADIANCES</ins>:

E (260-320) = 0.4607E-06 W CM**-2

E (320-400) = 0.3433E-04 W CM**-2

E (400-700) = 0.1369E-02 W CM**-2

E (700-1400) = 0.6178E-02 W CM**-2

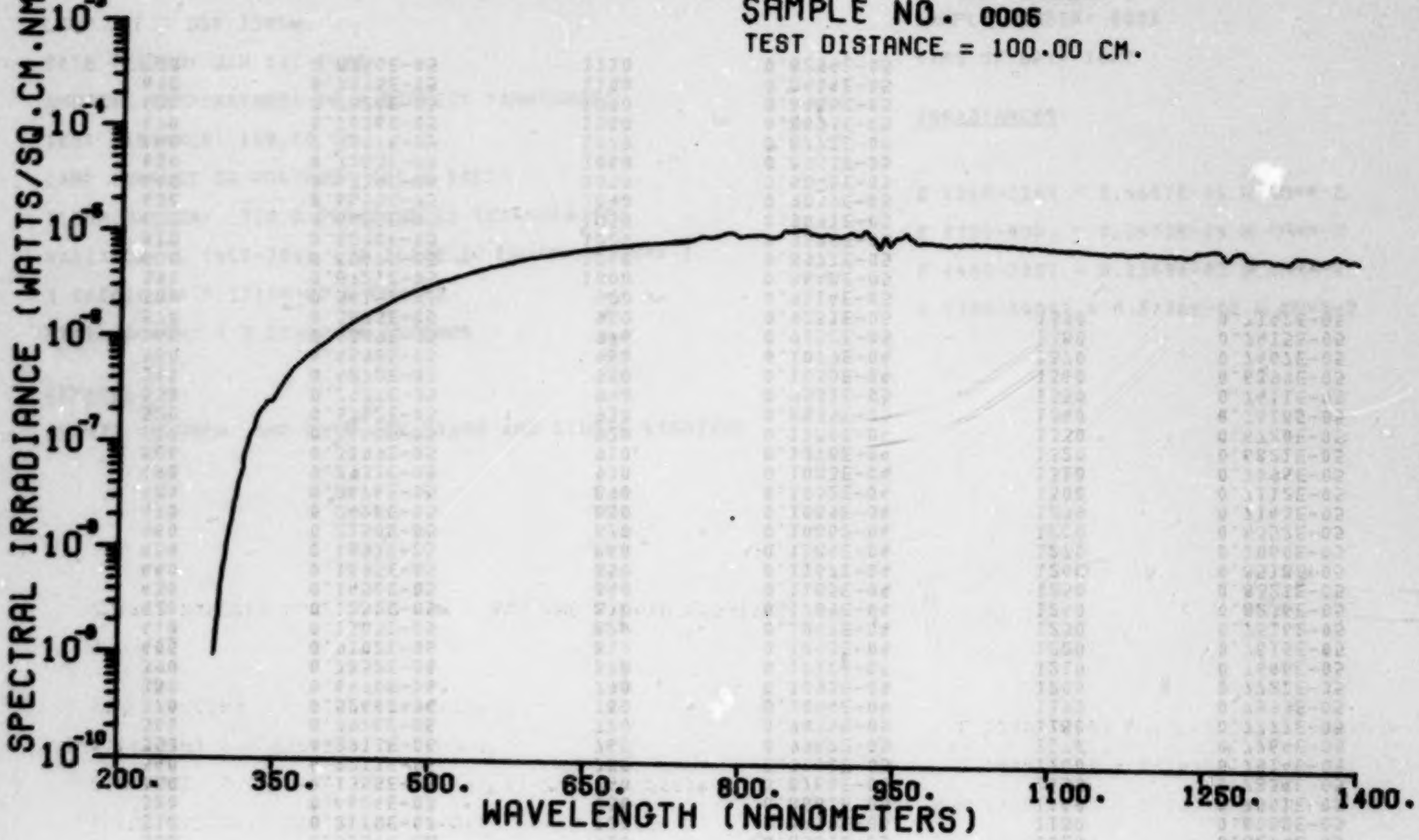
SAMPLE NUMBER 0005

TEST DISTANCE 100.00 CM.

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE DSF 1500W.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
300	0.5154E-08	710	0.8361E-05	1120	0.8274E-05
310	0.2110E-07	720	0.8499E-05	1130	0.8088E-05
320	0.6624E-07	730	0.8661E-05	1140	0.7951E-05
330	0.1388E-06	740	0.8760E-05	1150	0.7834E-05
340	0.2213E-06	750	0.9068E-05	1160	0.7914E-05
350	0.2713E-06	760	0.9982E-05	1170	0.7764E-05
360	0.3976E-06	770	0.9834E-05	1180	0.7777E-05
370	0.5266E-06	780	0.1044E-04	1190	0.7893E-05
380	0.6490E-06	790	0.1093E-04	1200	0.7722E-05
390	0.7852E-06	800	0.1012E-04	1210	0.7646E-05
400	0.9102E-06	810	0.1043E-04	1220	0.7615E-05
410	0.1103E-05	820	0.1047E-04	1230	0.7516E-05
420	0.1282E-05	830	0.1009E-04	1240	0.8236E-05
430	0.1488E-05	840	0.1165E-04	1250	0.8321E-05
440	0.1695E-05	850	0.1167E-04	1260	0.8518E-05
450	0.1897E-05	860	0.1184E-04	1270	0.7060E-05
460	0.2150E-05	870	0.1086E-04	1280	0.8352E-05
470	0.2428E-05	880	0.1089E-04	1290	0.7143E-05
480	0.2676E-05	890	0.1052E-04	1300	0.7112E-05
490	0.2933E-05	900	0.1083E-04	1310	0.7096E-05
500	0.3199E-05	910	0.1078E-04	1320	0.6821E-05
510	0.3480E-05	920	0.1180E-04	1330	0.6720E-05
520	0.3712E-05	930	0.8839E-05	1340	0.7618E-05
530	0.3987E-05	940	0.9531E-05	1350	0.7411E-05
540	0.4272E-05	950	0.1035E-04	1360	0.6899E-05
550	0.4590E-05	960	0.1079E-04	1370	0.7467E-05
560	0.4889E-05	970	0.9152E-05	1380	0.7415E-05
570	0.5073E-05	980	0.9251E-05	1390	0.7142E-05
580	0.5415E-05	990	0.9114E-05		
590	0.5721E-05	1000	0.8848E-05		
600	0.5967E-05	1010	0.8977E-05		
610	0.6206E-05	1020	0.9088E-05		
620	0.6456E-05	1030	0.9091E-05		
630	0.6695E-05	1040	0.9059E-05		
640	0.6934E-05	1050	0.9045E-05		
650	0.7183E-05	1060	0.8953E-05		
660	0.7397E-05	1070	0.8772E-05		
670	0.7616E-05	1080	0.8693E-05		
680	0.7826E-05	1090	0.8485E-05		
690	0.7995E-05	1100	0.8404E-05		
700	0.8256E-05	1110	0.8294E-05		

SPECTRAL IRRADIANCE FOR LAMP TYPE DSF 1500W.
SAMPLE NO. 0006
TEST DISTANCE = 100.00 CM.



SAMPLE NUMBER: 0006

TIME OF DAY: 1442

LAMP TYPE: DSF 1500W.

DATE TESTED: JAN 11, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 358.2 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1677E 07 UW CM**-2SR**-1

I (ACGIH) = 0.2506E-07 W CM**-2

TIME (ACGIH) = 0.1197E+06 SECONDS

__IRRADIANCES:__

E (260-320) = 0.6122E-06 W CM**-2

E (320-400) = 0.3930E-04 W CM**-2

E (400-700) = 0.1492E-02 W CM**-2

E (700-1400) = 0.6400E-02 W CM**-2

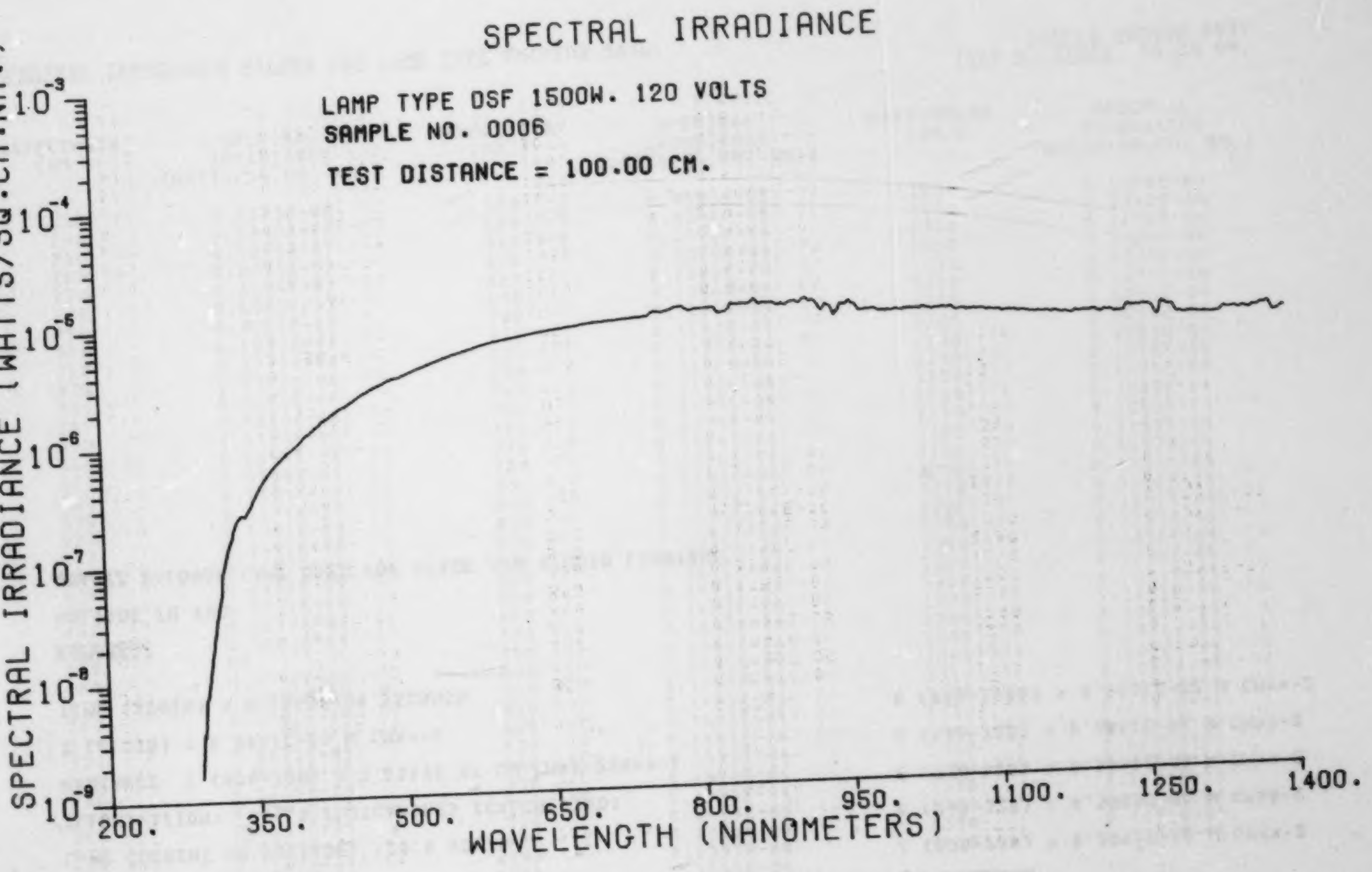
__REMARKS:__

QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE DSF 1500W.

SAMPLE NUMBER 0006
TEST DISTANCE 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
300	0.7671E-08	710	0.9011E-05	1120	0.8518E-05
310	0.2595E-07	720	0.9175E-05	1130	0.8275E-05
320	0.9016E-07	730	0.9353E-05	1140	0.8137E-05
330	0.1711E-06	740	0.9474E-05	1150	0.8104E-05
340	0.2642E-06	750	0.9594E-05	1160	0.8044E-05
350	0.3118E-06	760	0.1039E-04	1170	0.7905E-05
360	0.4591E-06	770	0.1035E-04	1180	0.7738E-05
370	0.5982E-06	780	0.1096E-04	1190	0.7892E-05
380	0.7358E-06	790	0.1141E-04	1200	0.7942E-05
390	0.8843E-06	800	0.1061E-04	1210	0.7796E-05
400	0.1025E-05	810	0.1082E-04	1220	0.7924E-05
410	0.1236E-05	820	0.1097E-04	1230	0.7713E-05
420	0.1444E-05	830	0.9905E-05	1240	0.8687E-05
430	0.1673E-05	840	0.1167E-04	1250	0.8528E-05
440	0.1905E-05	850	0.1153E-04	1260	0.8554E-05
450	0.2120E-05	860	0.1190E-04	1270	0.7054E-05
460	0.2400E-05	870	0.1150E-04	1280	0.8431E-05
470	0.2695E-05	880	0.1164E-04	1290	0.7274E-05
480	0.2983E-05	890	0.1124E-04	1300	0.7225E-05
490	0.3264E-05	900	0.1164E-04	1310	0.7112E-05
500	0.3482E-05	910	0.1169E-04	1320	0.7045E-05
510	0.3730E-05	920	0.1163E-04	1330	0.7117E-05
520	0.4035E-05	930	0.9740E-05	1340	0.7641E-05
530	0.4322E-05	940	0.1003E-04	1350	0.7569E-05
540	0.4634E-05	950	0.1074E-04	1360	0.7510E-05
550	0.4972E-05	960	0.1107E-04	1370	0.7788E-05
560	0.5294E-05	970	0.9420E-05	1380	0.8254E-05
570	0.5585E-05	980	0.9572E-05	1390	0.7033E-05
580	0.5931E-05	990	0.9191E-05		
590	0.6245E-05	1000	0.9212E-05		
600	0.6528E-05	1010	0.9204E-05		
610	0.6785E-05	1020	0.9455E-05		
620	0.7052E-05	1030	0.9332E-05		
630	0.7296E-05	1040	0.9261E-05		
640	0.7546E-05	1050	0.9368E-05		
650	0.7789E-05	1060	0.9446E-05		
660	0.7987E-05	1070	0.9006E-05		
670	0.8196E-05	1080	0.8882E-05		
680	0.8425E-05	1090	0.8970E-05		
690	0.8656E-05	1100	0.8739E-05		
700	0.8903E-05	1110	0.8613E-05		


SPECTRAL IRRADIANCE
LAMP TYPE DSF 1500W. 120 VOLTS
SAMPLE NO. 0006
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-3
10^-4
10^-5
10^-6
10^-7
10^-8
10^-9
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: EHC/EHB 500W.

DATE TESTED: DEC 22, 1977

AMBIENT TEMPERATURE: 79.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 444.9 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.8349E 07 UW CM**-2SR**-1

I (ACGIH) = 0.2051E-05 W CM**-2

TIME (ACGIH) = 0.1463E+04 SECONDS

<u>REMARKS</u>:

VOLTAGE IN VDC

QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

SAMPLE NUMBER: 0007

TIME OF DAY: 1000

<u>IRRADIANCES</u>:

E (200-260) = 0.2841E-06 W CM**-2

E (260-320) = 0.5989E-05 W CM**-2

E (320-400) = 0.5681E-04 W CM**-2

E (400-700) = 0.1861E-02 W CM**-2

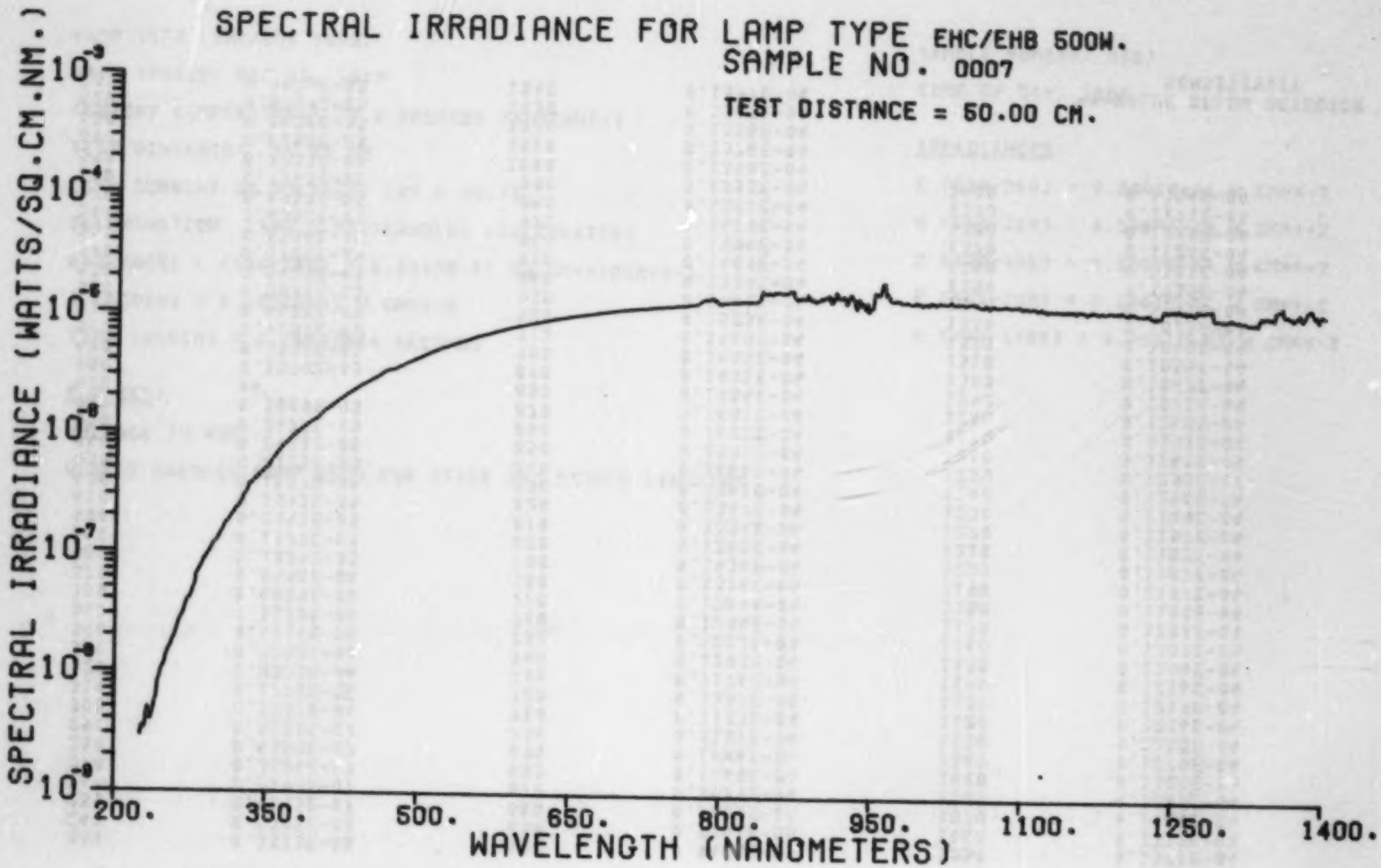
E (700-1400) = 0.9031E-02 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE EHC/EHB 500W.

SAMPLE NUMBER 0007
TEST DISTANCE 50.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
230	0.3373E-08	640	0.9403E-05	1050	0.1374E-04
240	0.5595E-08	650	0.9741E-05	1060	0.1312E-04
250	0.1245E-07	660	0.1001E-04	1070	0.1324E-04
260	0.2093E-07	670	0.1029E-04	1080	0.1320E-04
270	0.3624E-07	680	0.1060E-04	1090	0.1320E-04
280	0.6355E-07	690	0.1086E-04	1100	0.1279E-04
290	0.9221E-07	700	0.1117E-04	1110	0.1285E-04
300	0.1237E-06	710	0.1133E-04	1120	0.1236E-04
310	0.1771E-06	720	0.1157E-04	1130	0.1219E-04
320	0.2325E-06	730	0.1176E-04	1140	0.1218E-04
330	0.3282E-06	740	0.1193E-04	1150	0.1204E-04
340	0.4214E-06	750	0.1213E-04	1160	0.1209E-04
350	0.5120E-06	760	0.1234E-04	1170	0.1203E-04
360	0.6809E-06	770	0.1264E-04	1180	0.1189E-04
370	0.8408E-06	780	0.1376E-04	1190	0.1197E-04
380	0.1004E-05	790	0.1430E-04	1200	0.1187E-04
390	0.1177E-05	800	0.1302E-04	1210	0.1182E-04
400	0.1341E-05	810	0.1334E-04	1220	0.1157E-04
410	0.1591E-05	820	0.1347E-04	1230	0.1109E-04
420	0.1857E-05	830	0.1361E-04	1240	0.1256E-04
430	0.2125E-05	840	0.1666E-04	1250	0.1255E-04
440	0.2421E-05	850	0.1591E-04	1260	0.1241E-04
450	0.2677E-05	860	0.1622E-04	1270	0.1191E-04
460	0.3009E-05	870	0.1691E-04	1280	0.1268E-04
470	**	880	0.1484E-04	1290	0.1071E-04
480	0.3590E-05	890	0.1431E-04	1300	0.1062E-04
490	0.3935E-05	900	0.1465E-04	1310	0.1055E-04
500	0.4281E-05	910	0.1465E-04	1320	0.1040E-04
510	0.4678E-05	920	0.1523E-04	1330	0.1013E-04
520	0.5053E-05	930	0.1481E-04	1340	0.1141E-04
530	0.5429E-05	940	0.1339E-04	1350	0.1235E-04
540	0.5769E-05	950	0.1409E-04	1360	0.1181E-04
550	0.6186E-05	960	0.1994E-04	1370	0.1128E-04
560	0.6563E-05	970	0.1419E-04	1380	0.1210E-04
570	0.6919E-05	980	0.1381E-04	1390	0.1171E-04
580	0.7363E-05	990	0.1353E-04	1400	0.1154E-04
590	0.7733E-05	1000	0.1340E-04		
600	0.8088E-05	1010	0.1376E-04		
610	0.8426E-05	1020	0.1386E-04		
620	0.8759E-05	1030	0.1365E-04		
630	0.9075E-05	1040	0.1357E-04		

**-VALUE BELOW DETECTOR SENSITIVITY


SPECTRAL IRRADIANCE FOR LAMP TYPE EHC/EHB 500W.
SAMPLE NO. 0007
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-3
10^-4
10^-5
10^-6
10^-7
10^-8
10^-9
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: EHC/EHB 500W.

DATE TESTED: DEC 22, 1977

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 308.0 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.8734E 07 UW CM**-2SR**-1

I (ACGIH) = 0.1692E-05 W CM**-2

TIME (ACGIH) = 0.1773E+04 SECONDS

<u>REMARKS</u>:

VOLTAGE IN VDC

QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

SAMPLE NUMBER: 0008

TIME OF DAY: 1209

<u>IRRADIANCES</u>:

E (200-260) = 0.2810E-06 W CM**-2

E (260-320) = 0.4211E-05 W CM**-2

E (320-400) = 0.4011E-04 W CM**-2

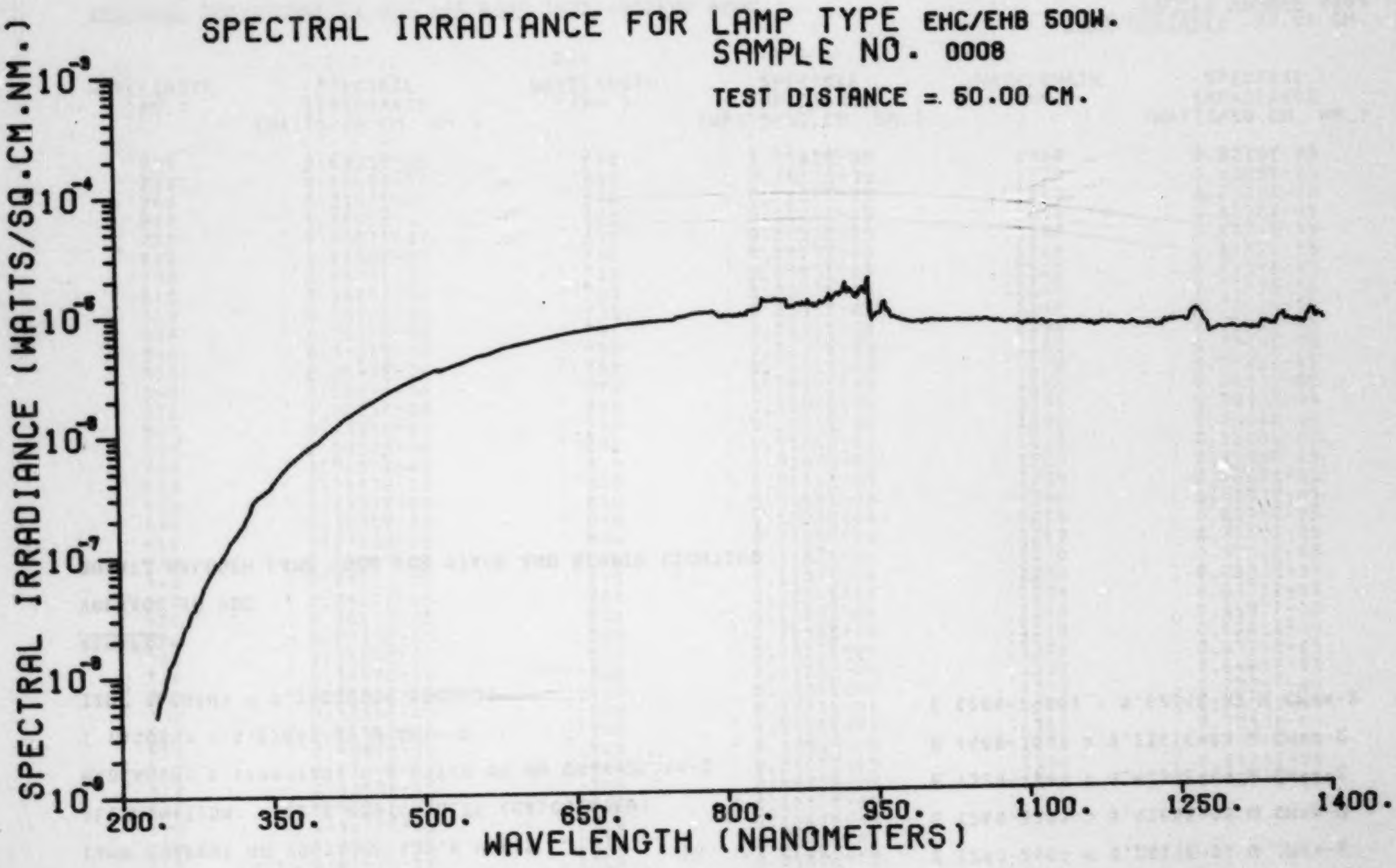
E (400-700) = 0.1299E-02 W CM**-2

E (700-1400) = 0.5940E-02 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE EHC/EHB 500W.

SAMPLE NUMBER 0008
TEST DISTANCE 50.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
240	0.6735E-08	650	0.6862E-05	1060	0.8045E-05
250	0.1272E-07	660	0.7064E-05	1070	0.7584E-05
260	0.2037E-07	670	0.7269E-05	1080	0.7440E-05
270	0.3343E-07	680	0.7466E-05	1090	0.7560E-05
280	0.4709E-07	690	0.7679E-05	1100	0.7354E-05
290	0.7165E-07	700	0.7907E-05	1110	0.7449E-05
300	0.9255E-07	710	0.8025E-05	1120	0.7340E-05
310	0.1311E-06	720	0.8179E-05	1130	0.7391E-05
320	0.1680E-06	730	0.8317E-05	1140	0.7366E-05
330	0.2374E-06	740	0.8427E-05	1150	0.7274E-05
340	0.3199E-06	750	0.8527E-05	1160	0.7209E-05
350	0.3699E-06	760	0.9041E-05	1170	0.6844E-05
360	0.4821E-06	770	0.9469E-05	1180	0.7220E-05
370	0.5899E-06	780	0.9646E-05	1190	0.7144E-05
380	0.6980E-06	790	0.9877E-05	1200	0.6906E-05
390	0.8102E-06	800	0.9023E-05	1210	0.7129E-05
400	0.9227E-06	810	0.9081E-05	1220	0.6879E-05
410	0.1099E-05	820	0.9166E-05	1230	0.6722E-05
420	0.1279E-05	830	0.1003E-04	1240	0.7306E-05
430	0.1467E-05	840	0.1223E-04	1250	0.7541E-05
440	0.1680E-05	850	0.1205E-04	1260	0.7364E-05
450	0.1863E-05	860	0.1197E-04	1270	0.9283E-05
460	0.2078E-05	870	0.1064E-04	1280	0.7126E-05
470	0.2329E-05	880	0.1143E-04	1290	0.6119E-05
480	0.2574E-05	890	0.1075E-04	1300	0.6259E-05
490	0.2810E-05	900	0.1133E-04	1310	0.6258E-05
500	0.3032E-05	910	0.1254E-04	1320	0.6288E-05
510	0.3312E-05	920	0.1450E-04	1330	0.6250E-05
520	0.3421E-05	930	0.1304E-04	1340	0.6975E-05
530	0.3693E-05	940	0.1472E-04	1350	0.7009E-05
540	0.3939E-05	950	0.8672E-05	1360	0.7221E-05
550	0.4258E-05	960	0.1138E-04	1370	0.7257E-05
560	0.4553E-05	970	0.8512E-05	1380	0.7854E-05
570	0.4739E-05	980	0.8025E-05	1390	0.7708E-05
580	0.5086E-05	990	0.7623E-05		
590	0.5382E-05	1000	0.7693E-05		
600	0.5624E-05	1010	0.7896E-05		
610	0.5860E-05	1020	0.7921E-05		
620	0.6097E-05	1030	0.7939E-05		
630	0.6357E-05	1040	0.7862E-05		
640	0.6612E-05	1050	0.7795E-05		


SPECTRAL IRRADIANCE FOR LAMP TYPE EHC/EHB 500W.
SAMPLE NO. 0008
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: EHC/EHB 500W.

DATE TESTED: DEC 22, 1977

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 322.8 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.8970E 07 UW CM**-2SR**-1

I (ACGIH) = 0.1784E-05 W CM**-2

TIME (ACGIH) = 0.1682E+04 SECONDS

REMARKS:

VOLTAGE IN VDC

QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

SAMPLE NUMBER: 0009

TIME OF DAY: 1417

IRRADIANCES:

E (200-260) = 0.2819E-06 W CM**-2

E (260-320) = 0.4765E-05 W CM**-2

E (320-400) = 0.4237E-04 W CM**-2

E (400-700) = 0.1361E-02 W CM**-2

E (700-1400) = 0.6234E-02 W CM**-2

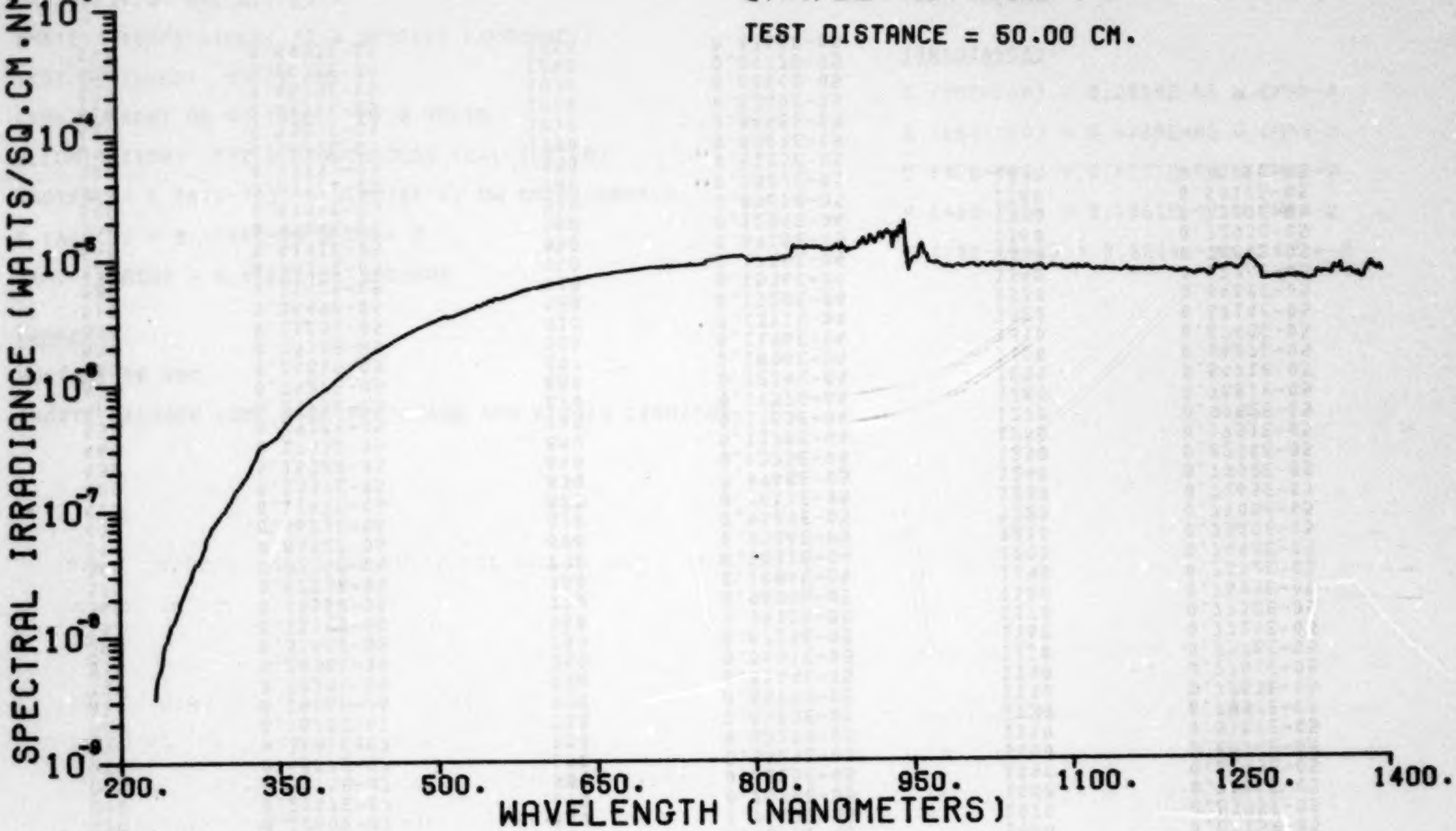
SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE EHC/EHB 500W.

SAMPLE NUMBER 0009
TEST DISTANCE 50.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
240	0.6933E-08	650	0.7202E-05	1060	0.8215E-05
250	0.1266E-07	660	0.7413E-05	1070	0.8355E-05
260	0.2147E-07	670	0.7630E-05	1080	0.7980E-05
270	0.3475E-07	680	0.7825E-05	1090	0.8298E-05
280	0.4887E-07	690	0.8029E-05	1100	0.8074E-05
290	0.7651E-07	700	0.8277E-05	1110	0.8187E-05
300	0.9878E-07	710	0.8403E-05	1120	0.7997E-05
310	0.1406E-06	720	0.8579E-05	1130	0.7783E-05
320	0.1820E-06	730	0.8543E-05	1140	0.7761E-05
330	0.2636E-06	740	0.8631E-05	1150	0.7578E-05
340	0.3366E-06	750	0.8729E-05	1160	0.7714E-05
350	0.3890E-06	760	0.9431E-05	1170	0.7738E-05
360	0.5056E-06	770	0.9809E-05	1180	0.7699E-05
370	0.6221E-06	780	0.1006E-04	1190	0.7892E-05
380	0.7324E-06	790	0.1031E-04	1200	0.7440E-05
390	0.8452E-06	800	0.9386E-05	1210	0.7580E-05
400	0.9625E-06	810	0.9509E-05	1220	0.7105E-05
410	0.1147E-05	820	0.9611E-05	1230	0.7265E-05
420	0.1337E-05	830	0.9948E-05	1240	0.7992E-05
430	0.1532E-05	840	0.1225E-04	1250	0.8290E-05
440	0.1743E-05	850	0.1170E-04	1260	0.7751E-05
450	0.1938E-05	860	0.1183E-04	1270	0.9752E-05
460	0.2171E-05	870	0.1137E-04	1280	0.7881E-05
470	0.2427E-05	880	0.1234E-04	1290	0.6471E-05
480	0.2681E-05	890	0.1090E-04	1300	0.6487E-05
490	0.2935E-05	900	0.1196E-04	1310	0.6748E-05
500	0.3169E-05	910	0.1311E-04	1320	0.6714E-05
510	0.3449E-05	920	0.1520E-04	1330	0.6485E-05
520	0.3542E-05	930	0.1536E-04	1340	0.7226E-05
530	0.3830E-05	940	0.1725E-04	1350	0.7884E-05
540	0.4191E-05	950	0.8918E-05	1360	0.7293E-05
550	0.4504E-05	960	0.1254E-04	1370	0.7050E-05
560	0.4794E-05	970	0.8961E-05	1380	0.6910E-05
570	0.4997E-05	980	0.8522E-05	1390	0.7801E-05
580	0.5374E-05	990	0.8115E-05		
590	0.5671E-05	1000	0.8267E-05		
600	0.5905E-05	1010	0.8645E-05		
610	0.6151E-05	1020	0.8580E-05		
620	0.6410E-05	1030	0.8266E-05		
630	0.6677E-05	1040	0.8477E-05		
640	0.6933E-05	1050	0.8365E-05		

SPECTRAL IRRADIANCE FOR LAMP TYPE EHC/EHB 500W.
SAMPLE NO. 0009

TEST DISTANCE = 50.00 CM.



LAMP TYPE: EGR 750W.

DATE TESTED: DEC 16, 1977

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 1014.5 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.9893E 07 UW CM**-2SR**-1

I (ACGIH) = 0.5680E-05 W CM**-2

TIME (ACGIH) = 0.5281E+03 SECONDS

SAMPLE NUMBER: 0010

TIME OF DAY: 1027

IRRADIANCES:

E (200-260) = 0.9149E-06 W CM**-2

E (260-320) = 0.1588E-04 W CM**-2

E (320-400) = 0.1429E-03 W CM**-2

E (400-700) = 0.4212E-02 W CM**-2

E (700-1400) = 0.1789E-01 W CM**-2

REMARKS:

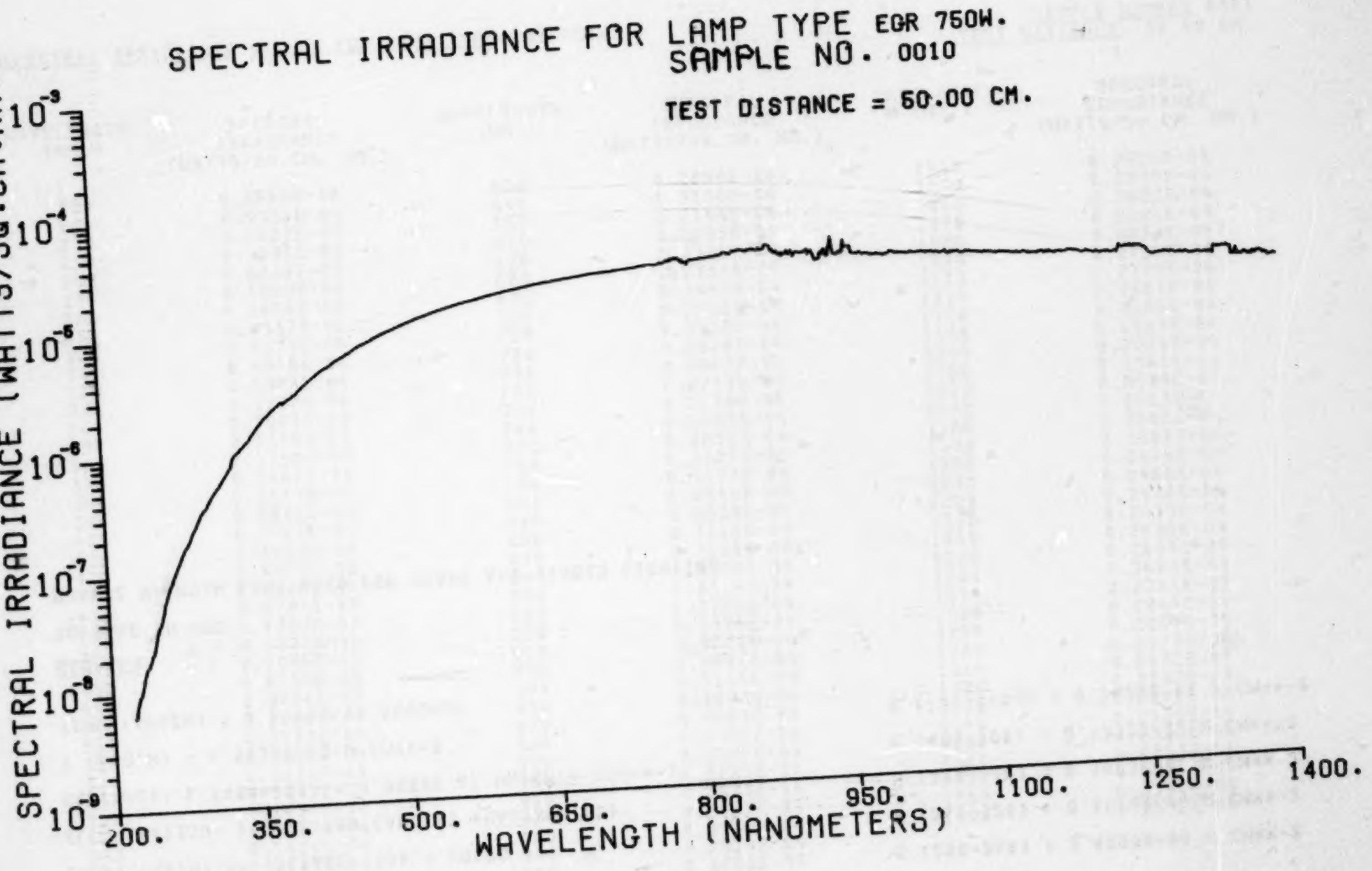
VOLTAGE IN VDC

QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE EGR 750W.

SAMPLE NUMBER 0010
TEST DISTANCE 50.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
230	0.1058E-07	640	0.2087E-04	1050	0.2647E-04
240	0.1858E-07	650	0.2150E-04	1060	0.2622E-04
250	0.3588E-07	660	0.2206E-04	1070	0.2610E-04
260	0.6609E-07	670	0.2271E-04	1080	0.2528E-04
270	0.1073E-06	680	0.2321E-04	1090	0.2541E-04
280	0.1638E-06	690	0.2382E-04	1100	0.2481E-04
290	0.2388E-06	700	0.2452E-04	1110	0.2475E-04
300	0.3437E-06	710	0.2485E-04	1120	0.2450E-04
310	0.4622E-06	720	0.2530E-04	1130	0.2388E-04
320	0.5953E-06	730	0.2573E-04	1140	0.2375E-04
330	0.7995E-06	740	0.2617E-04	1150	0.2335E-04
340	0.1101E-05	750	0.2677E-04	1160	0.2399E-04
350	0.1338E-05	760	0.2745E-04	1170	0.2313E-04
360	0.1760E-05	770	0.2750E-04	1180	0.2318E-04
370	0.2160E-05	780	0.2928E-04	1190	0.2379E-04
380	0.2554E-05	790	0.3014E-04	1200	0.2251E-04
390	0.2813E-05	800	0.2692E-04	1210	0.2255E-04
400	0.3192E-05	810	0.2932E-04	1220	0.2189E-04
410	0.3837E-05	820	0.2982E-04	1230	0.2183E-04
420	0.4475E-05	830	0.3080E-04	1240	0.2435E-04
430	0.5086E-05	840	0.3199E-04	1250	0.2449E-04
440	0.5751E-05	850	0.3291E-04	1260	0.2405E-04
450	0.6320E-05	860	0.3242E-04	1270	0.2053E-04
460	0.7109E-05	870	0.3308E-04	1280	0.2078E-04
470	0.7884E-05	880	0.3606E-04	1290	0.2063E-04
480	0.8717E-05	890	0.3088E-04	1300	0.2044E-04
490	0.9482E-05	900	0.3009E-04	1310	0.1984E-04
500	0.1022E-04	910	0.3022E-04	1320	0.2005E-04
510	0.1104E-04	920	0.3049E-04	1330	0.1995E-04
520	0.1183E-04	930	0.2576E-04	1340	0.2173E-04
530	0.1264E-04	940	0.3000E-04	1350	0.2166E-04
540	0.1346E-04	950	0.2812E-04	1360	0.1849E-04
550	0.1421E-04	960	0.3231E-04	1370	0.1862E-04
560	0.1504E-04	970	0.2790E-04	1380	0.1935E-04
570	0.1588E-04	980	0.2753E-04	1390	0.1763E-04
580	0.1654E-04	990	0.2688E-04		
590	0.1730E-04	1000	0.2655E-04		
600	0.1804E-04	1010	0.2768E-04		
610	0.1877E-04	1020	0.2693E-04		
620	0.1950E-04	1030	0.2660E-04		
630	0.2013E-04	1040	0.2690E-04		



SPECTRAL IRRADIANCE FOR LAMP TYPE EGR 750W.
SAMPLE NO. 0010
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-3
10^-4
10^-5
10^-6
10^-7
10^-8
10^-9
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: EGR 750W.

DATE TESTED: DEC 16, 1977

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 1029.2 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.9589E 07 UW CM**-2SR**-1

I (ACGIH) = 0.5530E-05 W CM**-2

TIME (ACGIH) = 0.5425E+03 SECONDS

REMARKS:

VOLTAGE IN VDC

QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

SAMPLE NUMBER: 0011

TIME OF DAY: 1224

IRRADIANCES:

E (200-260) = 0.8229E-06 W CM**-2

E (260-320) = 0.1536E-04 W CM**-2

E (320-400) = 0.1423E-03 W CM**-2

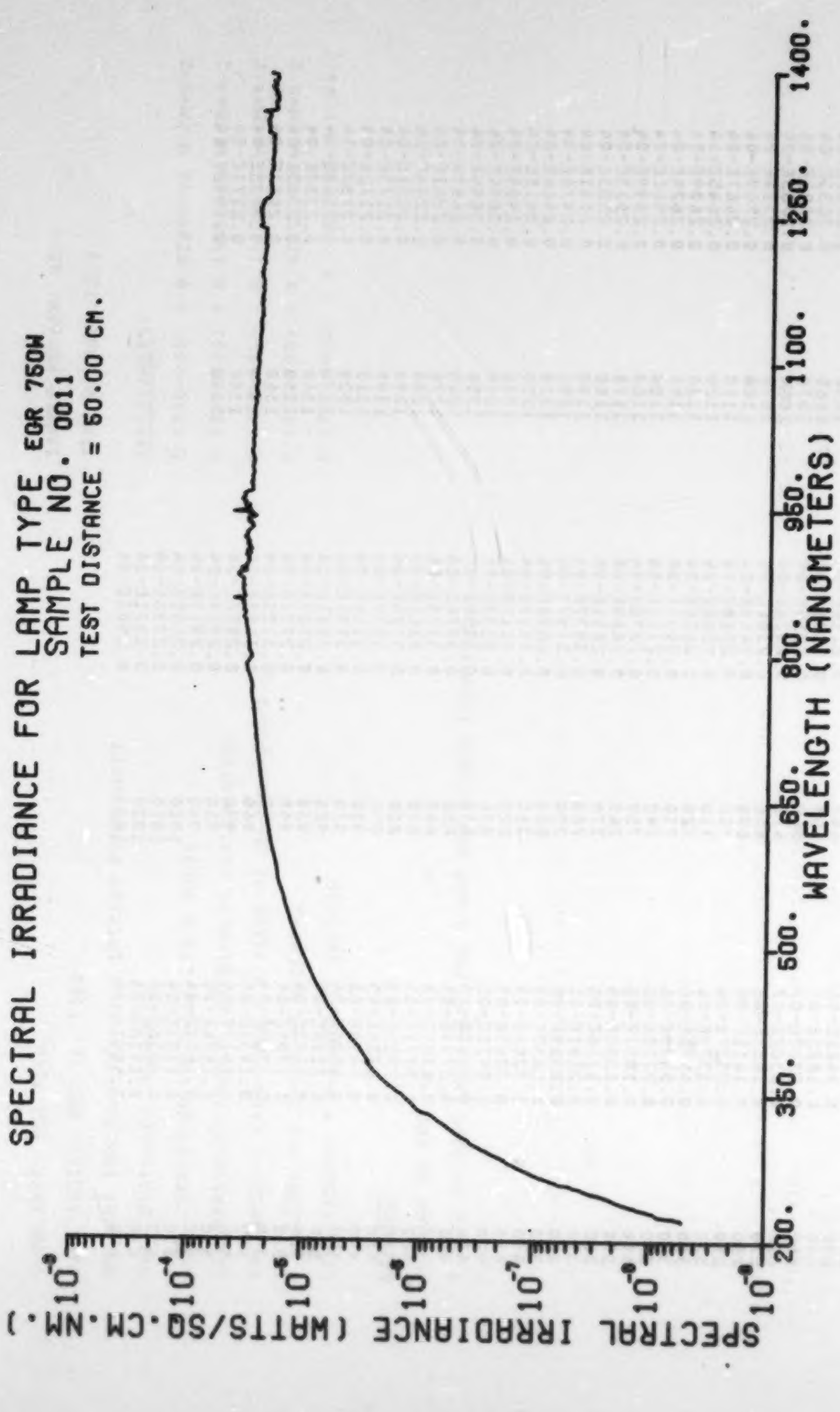
E (400-700) = 0.4282E-02 W CM**-2

E (700-1400) = 0.1920E-01 W CM**-2

SAMPLE NUMBER 0011
TEST DISTANCE 50.00 CM.

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE EGR 750W.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
220	0.5088E-08	630	0.2059E-04	1040	0.2921E-04
230	0.9486E-08	640	0.2130E-04	1050	0.2890E-04
240	0.1822E-07	650	0.2196E-04	1060	0.2833E-04
250	0.3302E-07	660	0.2255E-04	1070	0.2821E-04
260	0.6302E-07	670	0.2322E-04	1080	0.2733E-04
270	0.1055E-06	680	0.2386E-04	1090	0.2759E-04
280	0.1611E-06	690	0.2445E-04	1100	0.2709E-04
290	0.2337E-06	700	0.2518E-04	1110	0.2687E-04
300	0.3379E-06	710	0.2558E-04	1120	0.2645E-04
310	0.4578E-06	720	0.2620E-04	1130	0.2609E-04
320	0.5923E-06	730	0.2663E-04	1140	0.2624E-04
330	0.7778E-06	740	0.2713E-04	1150	0.2560E-04
340	0.1081E-05	750	0.2778E-04	1160	0.2599E-04
350	0.1330E-05	760	0.2869E-04	1170	0.2513E-04
360	0.1756E-05	770	0.2851E-04	1180	0.2503E-04
370	0.2161E-05	780	0.3027E-04	1190	0.2581E-04
380	0.2569E-05	790	0.3197E-04	1200	0.2476E-04
390	0.2832E-05	800	0.2890E-04	1210	0.2466E-04
400	0.3206E-05	810	0.3030E-04	1220	0.2418E-04
410	0.3865E-05	820	0.3112E-04	1230	0.2409E-04
420	0.4471E-05	830	0.3238E-04	1240	0.2694E-04
430	0.5100E-05	840	0.3350E-04	1250	0.2694E-04
440	0.5799E-05	850	0.3376E-04	1260	0.2663E-04
450	0.6389E-05	860	0.3323E-04	1270	0.2261E-04
460	0.7171E-05	870	0.3386E-04	1280	0.2244E-04
470	0.7955E-05	880	0.3728E-04	1290	0.2231E-04
480	0.8734E-05	890	0.3270E-04	1300	0.2173E-04
490	0.9490E-05	900	0.3146E-04	1310	0.2172E-04
500	0.1026E-04	910	0.3138E-04	1320	0.2152E-04
510	0.1110E-04	920	0.3401E-04	1330	0.2161E-04
520	0.1193E-04	930	0.2907E-04	1340	0.2330E-04
530	0.1278E-04	940	0.2997E-04	1350	0.2365E-04
540	0.1363E-04	950	0.3223E-04	1360	0.2033E-04
550	0.1434E-04	960	0.3493E-04	1370	0.2028E-04
560	0.1517E-04	970	0.2957E-04	1380	0.2171E-04
570	0.1626E-04	980	0.2954E-04	1390	0.1992E-04
580	0.1679E-04	990	0.2919E-04		
590	0.1751E-04	1000	0.2885E-04		
600	0.1838E-04	1010	0.2998E-04		
610	0.1918E-04	1020	0.2971E-04		
620	0.1991E-04	1030	0.2903E-04		


SPECTRAL IRRADIANCE FOR LAMP TYPE EOR 750W
SAMPLE NO. 0011
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^{-9}
10^{-8}
10^{-7}
10^{-6}
10^{-5}
10^{-4}
10^{-3}
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

SAMPLE NUMBER: 0012

TIME OF DAY: 1420

LAMP TYPE: EGR 750W.

DATE TESTED: DEC 16, 1977

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 1060.1 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1073E 08 UW CM**-2SR**-1

I (ACGIH) = 0.6171E-05 W CM**-2

TIME (ACGIH) = 0.4862E+03 SECONDS

<u>IRRADIANCES</u>:

E (200-260) = 0.9572E-06 W CM**-2

E (260-320) = 0.1723E-04 W CM**-2

E (320-400) = 0.1535E-03 W CM**-2

E (400-700) = 0.4405E-02 W CM**-2

E (700-1400) = 0.1852E-01 W CM**-2

<u>REMARKS</u>:

VOLTAGE IN VDC

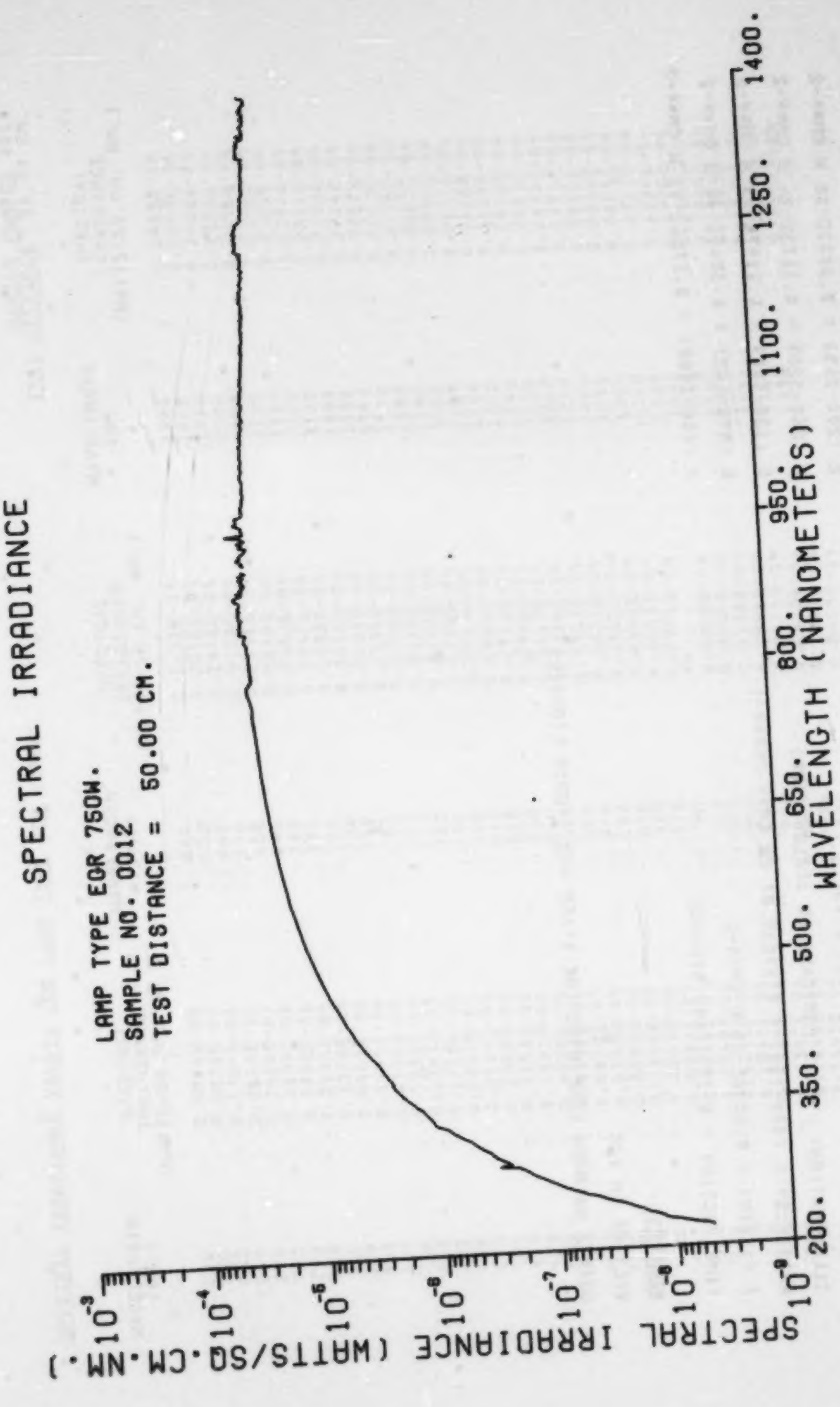
QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE EGR 750W.

SAMPLE NUMBER 0012
TEST DISTANCE 50.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
220	0.4943E-08	630	0.2104E-04	1040	0.2809E-04
230	0.1234E-07	640	0.2173E-04	1050	0.2751E-04
240	0.2043E-07	650	0.2244E-04	1060	0.2708E-04
250	0.3776E-07	660	0.2301E-04	1070	0.2703E-04
260	0.7000E-07	670	0.2369E-04	1080	0.2618E-04
270	0.1152E-06	680	0.2429E-04	1090	0.2647E-04
280	0.1756E-06	690	0.2489E-04	1100	0.2579E-04
290	0.2806E-06	700	0.2564E-04	1110	0.2569E-04
300	0.3668E-06	710	0.2604E-04	1120	0.2520E-04
310	0.4937E-06	720	0.2659E-04	1130	0.2474E-04
320	0.6719E-06	730	0.2704E-04	1140	0.2475E-04
330	0.9212E-06	740	0.2748E-04	1150	0.2428E-04
340	0.1220E-05	750	0.2808E-04	1160	0.2453E-04
350	0.1454E-05	760	0.2885E-04	1170	0.2369E-04
360	0.1895E-05	770	0.2884E-04	1180	0.2369E-04
370	0.2319E-05	780	0.3032E-04	1190	0.2421E-04
380	0.2593E-05	790	0.3174E-04	1200	0.2342E-04
390	0.3021E-05	800	0.2854E-04	1210	0.2313E-04
400	0.3411E-05	810	0.2905E-04	1220	0.2285E-04
410	0.4093E-05	820	0.2938E-04	1230	0.2294E-04
420	0.4741E-05	830	0.3015E-04	1240	0.2546E-04
430	0.5387E-05	840	0.3148E-04	1250	0.2551E-04
440	0.6086E-05	850	0.3391E-04	1260	0.2506E-04
450	0.6663E-05	860	0.3305E-04	1270	0.2213E-04
460	0.7466E-05	870	0.3390E-04	1280	0.2169E-04
470	0.8314E-05	880	0.3681E-04	1290	0.2122E-04
480	0.9101E-05	890	0.3204E-04	1300	0.2078E-04
490	0.9875E-05	900	0.3138E-04	1310	0.2045E-04
500	0.1064E-04	910	**	1320	0.2069E-04
510	0.1150E-04	920	0.3162E-04	1330	0.2062E-04
520	0.1235E-04	930	0.2898E-04	1340	0.2235E-04
530	0.1320E-04	940	0.3111E-04	1350	0.2172E-04
540	0.1405E-04	950	0.2948E-04	1360	0.1936E-04
550	0.1482E-04	960	0.3312E-04	1370	0.1917E-04
560	0.1572E-04	970	0.2895E-04	1380	0.1973E-04
570	0.1665E-04	980	0.2863E-04	1390	0.1819E-04
580	0.1733E-04	990	0.2802E-04		
590	0.1809E-04	1000	0.2777E-04		
600	0.1890E-04	1010	0.2873E-04		
610	0.1964E-04	1020	0.2830E-04		
620	0.2037E-04	1030	0.2821E-04		

**-VALUE BELOW DETECTOR SENSITIVITY


SPECTRAL IRRADIANCE
LAMP TYPE EOR 750W.
SAMPLE NO. 0012
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: FCV 1000W.

DATE TESTED: DEC 20, 1977

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 931.5 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.5703E 07 UW CM**-2SR**-1

I (ACGIH) = 0.3880E-05 W CM**-2

TIME (ACGIH) = 0.7731E+03 SECONDS

REMARKS:

VOLTAGE IN VDC

QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

SAMPLE NUMBER: 0013

TIME OF DAY: 1729

IRRADIANCES:

E (200-260) = 0.5001E-06 W CM**-2

E (260-320) = 0.1113E-04 W CM**-2

E (320-400) = 0.1147E-03 W CM**-2

E (400-700) = 0.3869E-02 W CM**-2

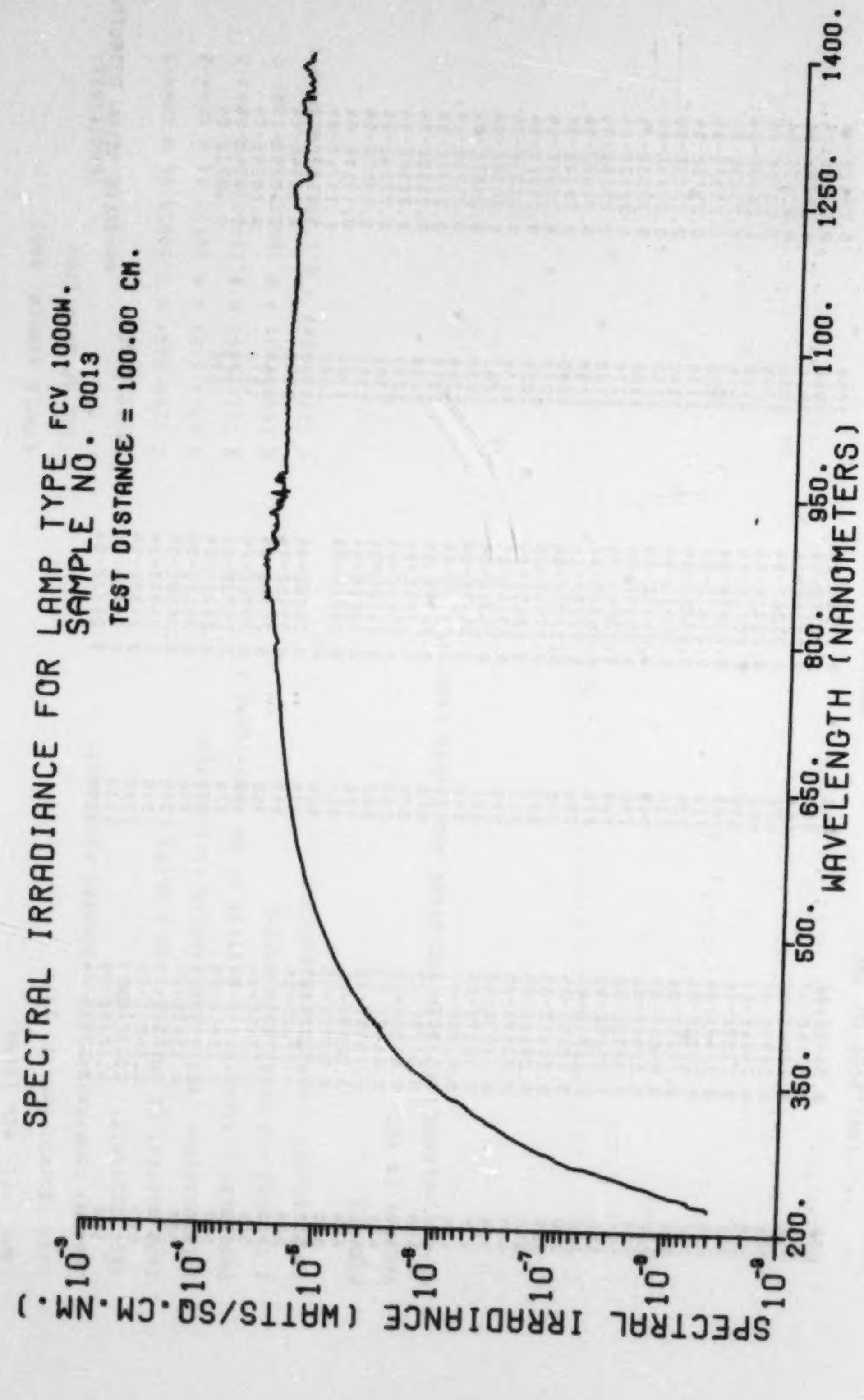
E (700-1400) = 0.1728E-01 W CM**-2

SAMPLE NUMBER 0013
TEST DISTANCE 50.00 CM.

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE FCV 1000W.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
230	0.5896E-08	640	0.1951E-04	1050	0.2440E-04
240	0.1076E-07	650	0.2018E-04	1060	0.2444E-04
250	0.1984E-07	660	0.2076E-04	1070	0.2488E-04
260	0.3635E-07	670	0.2128E-04	1080	0.2393E-04
270	0.7406E-07	680	0.2191E-04	1090	0.2396E-04
280	0.1150E-06	690	0.2246E-04	1100	0.2380E-04
290	0.1702E-06	700	0.2308E-04	1110	0.2385E-04
300	0.2408E-06	710	0.2347E-04	1120	0.2397E-04
310	0.3325E-06	720	0.2388E-04	1130	0.2316E-04
320	0.4461E-06	730	0.2446E-04	1140	0.2323E-04
330	0.5744E-06	740	0.2491E-04	1150	0.2274E-04
340	0.8152E-06	750	0.2534E-04	1160	0.2253E-04
350	0.1029E-05	760	0.2596E-04	1170	0.2212E-04
360	0.1383E-05	770	0.2690E-04	1180	0.2218E-04
370	0.1719E-05	780	0.2722E-04	1190	0.2262E-04
380	0.2061E-05	790	0.2779E-04	1200	0.2230E-04
390	0.2414E-05	800	0.2751E-04	1210	0.2231E-04
400	0.2759E-05	810	0.2865E-04	1220	0.2176E-04
410	0.3153E-05	820	0.2916E-04	1230	0.2135E-04
420	0.3837E-05	830	0.2991E-04	1240	0.2410E-04
430	0.4298E-05	840	0.3447E-04	1250	0.2467E-04
440	0.4932E-05	850	0.3334E-04	1260	0.2479E-04
450	0.5478E-05	860	0.3329E-04	1270	0.1791E-04
460	0.6154E-05	870	0.3321E-04	1280	0.2030E-04
470	0.6897E-05	880	0.3566E-04	1290	0.2054E-04
480	0.7596E-05	890	0.2942E-04	1300	0.2029E-04
490	0.8289E-05	900	0.3081E-04	1310	0.1987E-04
500	0.8997E-05	910	0.2921E-04	1320	0.1950E-04
510	0.9828E-05	920	**	1330	0.1976E-04
520	0.1062E-04	930	0.2808E-04	1340	0.2150E-04
530	0.1141E-04	940	0.2545E-04	1350	0.1994E-04
540	0.1215E-04	950	0.2596E-04	1360	0.1825E-04
550	0.1307E-04	960	0.2996E-04	1370	0.1824E-04
560	0.1381E-04	970	0.2473E-04	1380	0.2074E-04
570	0.1445E-04	980	0.2533E-04	1390	0.1872E-04
580	0.1545E-04	990	0.2461E-04		
590	0.1621E-04	1000	0.2450E-04		
600	0.1685E-04	1010	0.2494E-04		
610	0.1744E-04	1020	0.2485E-04		
620	0.1815E-04	1030	0.2470E-04		
630	0.1883E-04	1040	0.2472E-04		

**-VALUE BELOW DETECTOR SENSITIVITY


SPECTRAL IRRADIANCE FOR LAMP TYPE FCV 1000W.
SAMPLE NO. 0013
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^{-9}
10^{-8}
10^{-7}
10^{-6}
10^{-5}
10^{-4}
10^{-3}
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: FCV 1000W.

DATE TESTED: DEC 20, 1977

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 961.2 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.5918E 07 UW CM**-2SR**-1

I (ACGIH) = 0.4210E-05 W CM**-2

TIME (ACGIH) = 0.7126E+03 SECONDS

REMARKS:

VOLTAGE IN VDC

QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

SAMPLE NUMBER: 0014

TIME OF DAY: 1925

IRRADIANCES:

E (200-260) = 0.5901E-06 W CM**-2

E (260-320) = 0.1226E-04 W CM**-2

E (320-400) = 0.1238E-03 W CM**-2

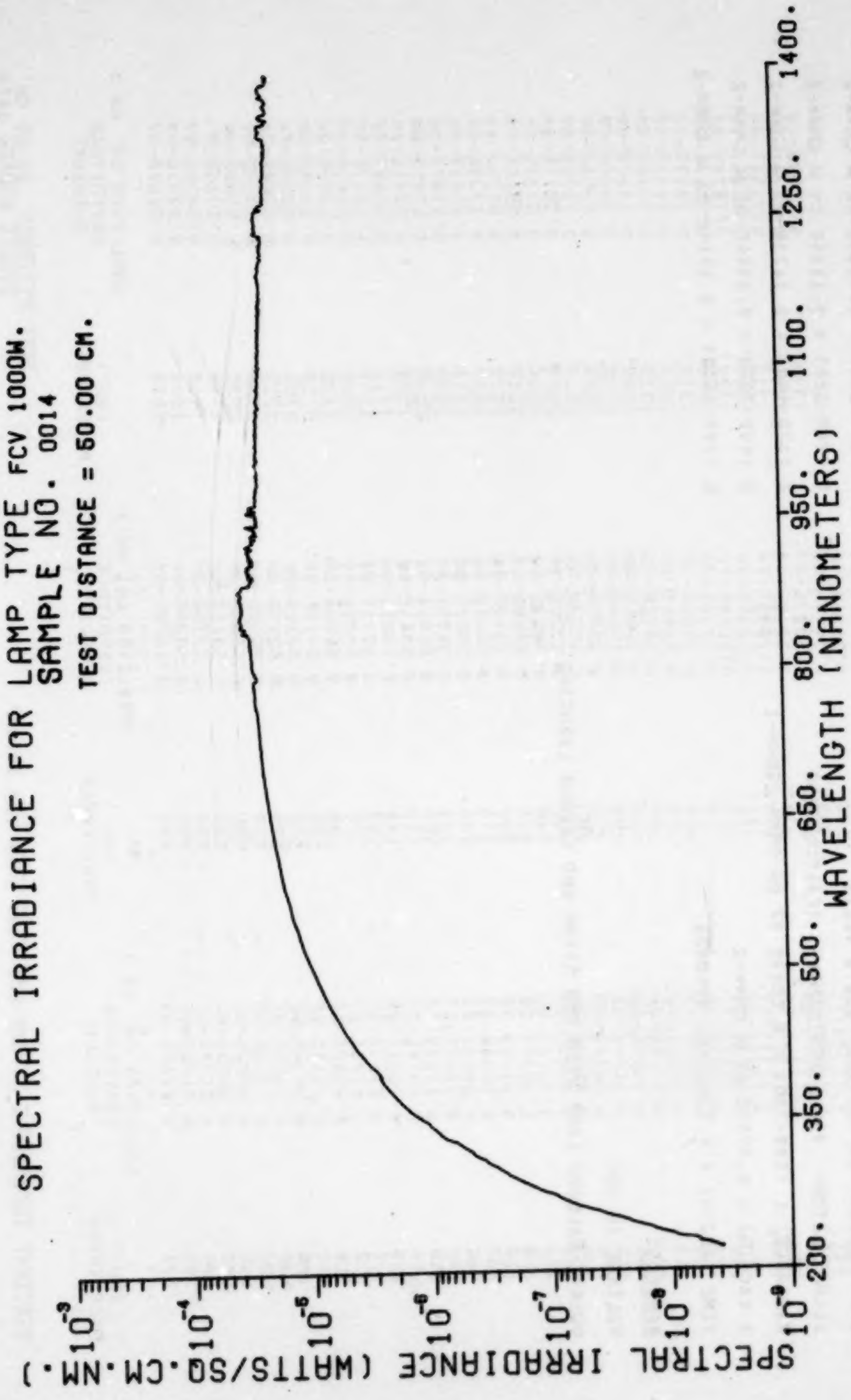
E (400-700) = 0.3990E-02 W CM**-2

E (700-1400) = 0.1689E-01 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE FCV 1000W.

SAMPLE NUMBER 0014
TEST DISTANCE 50.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
230	0.6011E-08	640	0.1994E-04	1050	0.2404E-04
240	0.1318E-07	650	0.2059E-04	1060	0.2377E-04
250	0.2337E-07	660	0.2117E-04	1070	0.2393E-04
260	0.4367E-07	670	0.2169E-04	1080	0.2306E-04
270	0.7740E-07	680	0.2234E-04	1090	0.2289E-04
280	0.1237E-06	690	0.2283E-04	1100	0.2275E-04
290	0.1833E-06	700	0.2357E-04	1110	0.2265E-04
300	0.2604E-06	710	0.2393E-04	1120	0.2274E-04
310	0.3582E-06	720	0.2435E-04	1130	0.2234E-04
320	0.4760E-06	730	0.2469E-04	1140	0.2237E-04
330	0.6455E-06	740	0.2496E-04	1150	0.2220E-04
340	0.9044E-06	750	0.2534E-04	1160	0.2206E-04
350	0.1126E-05	760	C.2583E-04	1170	0.2164E-04
360	0.1498E-05	770	0.2685E-04	1180	0.2145E-04
370	0.1863E-05	780	0.2697E-04	1190	0.2196E-04
380	0.2220E-05	790	0.2752E-04	1200	0.2188E-04
390	0.2593E-05	800	0.2714E-04	1210	0.2150E-04
400	0.2825E-05	810	0.2833E-04	1220	0.2089E-04
410	0.3444E-05	820	0.2866E-04	1230	0.2044E-04
420	0.4050E-05	830	0.2928E-04	1240	0.2302E-04
430	0.4638E-05	840	0.3368E-04	1250	0.2326E-04
440	0.5296E-05	850	0.3433E-04	1260	0.2305E-04
450	0.5851E-05	860	0.3387E-04	1270	0.1943E-04
460	0.6536E-05	870	0.3433E-04	1280	0.1946E-04
470	0.7286E-05	880	0.3682E-04	1290	0.1914E-04
480	0.8006E-05	890	0.2863E-04	1300	0.1889E-04
490	0.8711E-05	900	0.2989E-04	1310	0.1915E-04
500	0.9416E-05	910	0.2837E-04	1320	0.1864E-04
510	0.1027E-04	920	0.2969E-04	1330	0.1881E-04
520	0.1109E-04	930	0.2674E-04	1340	0.2040E-04
530	0.1187E-04	940	0.2535E-04	1350	0.1807E-04
540	0.1260E-04	950	0.2495E-04	1360	0.1769E-04
550	0.1348E-04	960	0.2921E-04	1370	0.1767E-04
560	0.1423E-04	970	0.2515E-04	1380	0.2016E-04
570	0.1488E-04	980	0.2496E-04	1390	0.1742E-04
580	0.1593E-04	990	0.2403E-04		
590	0.1668E-04	1000	0.2401E-04		
600	0.1731E-04	1010	0.2458E-04		
610	0.1791E-04	1020	0.2457E-04		
620	0.1860E-04	1030	0.2416E-04		
630	0.1925E-04	1040	0.2419E-04		



SPECTRAL IRRADIANCE FOR LAMP TYPE FCV 1000W.
SAMPLE NO. 0014
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-3
10^-4
10^-5
10^-6
10^-7
10^-8
10^-9
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: FCV 1000W.

DATE TESTED: DEC 20, 1977

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 950.6 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.6119E 07 UW CM**-2SR**-1

I (ACGIH) = 0.3967E-05 W CM**-2

TIME (ACGIH) = 0.7562E+03 SECONDS

REMARKS:

VOLTAGE IN VDC

QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

SAMPLE NUMBER: 0015

TIME OF DAY: 2141

IRRADIANCES:

E (200-260) = 0.4869E-06 W CM**-2

E (260-320) = 0.1134E-04 W CM**-2

E (320-400) = 0.1179E-03 W CM**-2

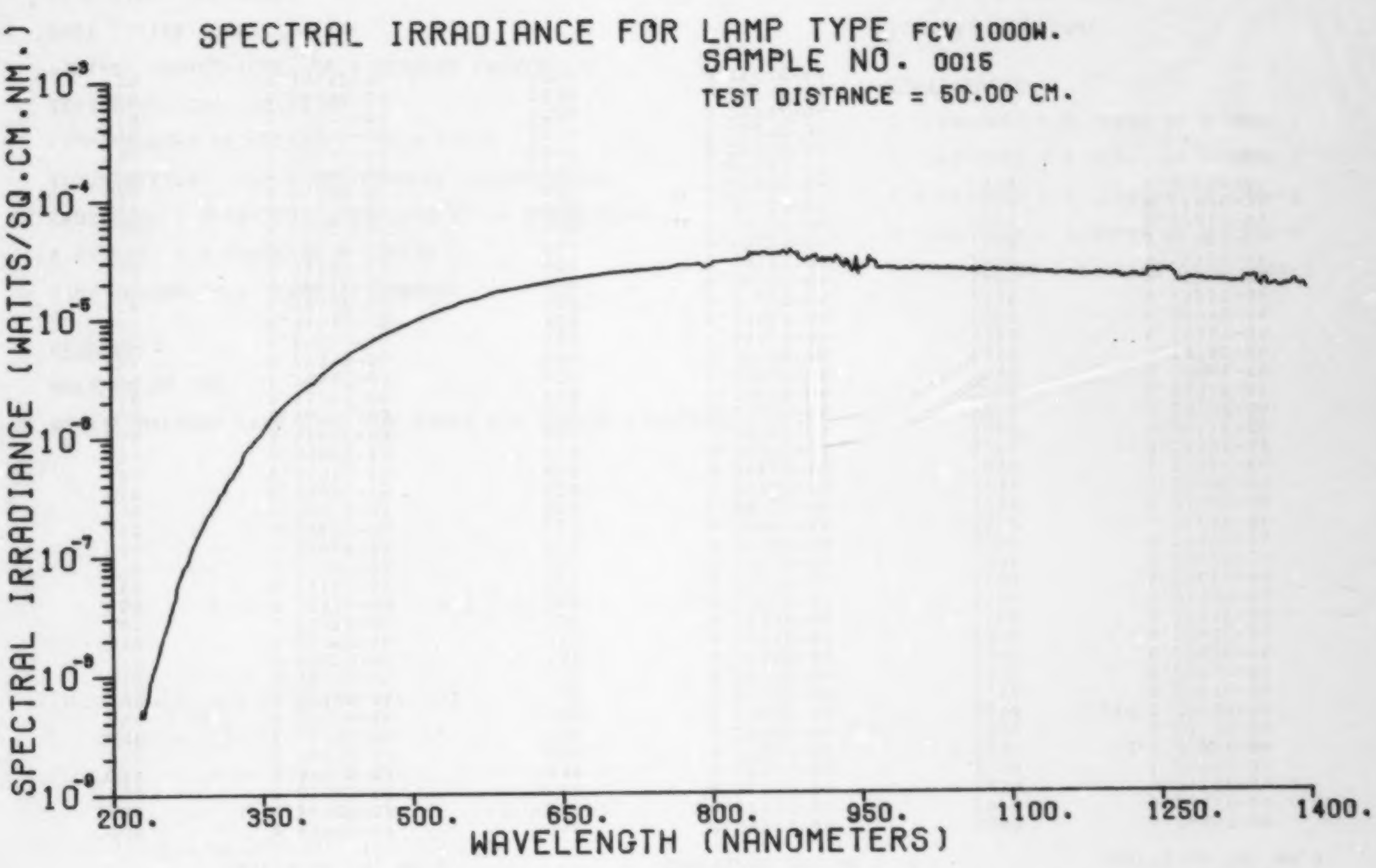
E (400-700) = 0.3944E-02 W CM**-2

E (700-1400) = 0.1714E-01 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE FCV 1000W.

SAMPLE NUMBER 0015
TEST DISTANCE 50.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
230	0.4590E-08	640	0.1986E-04	1050	0.2428E-04
240	0.1092E-07	650	0.2051E-04	1060	0.2391E-04
250	0.2116E-07	660	0.2110E-04	1070	0.2479E-04
260	0.3841E-07	670	0.2161E-04	1080	0.2397E-04
270	0.7405E-07	680	0.2222E-04	1090	0.2378E-04
280	0.1175E-06	690	0.2274E-04	1100	0.2373E-04
290	0.1727E-06	700	0.2342E-04	1110	0.2364E-04
300	0.2476E-06	710	0.2375E-04	1120	0.2383E-04
310	0.3371E-06	720	0.2419E-04	1130	0.2273E-04
320	0.4588E-06	730	0.2458E-04	1140	0.2283E-04
330	0.6140E-06	740	0.2495E-04	1150	0.2243E-04
340	0.8572E-06	750	0.2533E-04	1160	0.2273E-04
350	0.1061E-05	760	0.2581E-04	1170	0.2198E-04
360	0.1416E-05	770	0.2707E-04	1180	0.2201E-04
370	0.1754E-05	780	0.2705E-04	1190	0.2242E-04
380	0.2102E-05	790	0.2740E-04	1200	0.2180E-04
390	0.2460E-05	800	0.2684E-04	1210	0.2189E-04
400	0.2807E-05	810	0.2871E-04	1220	0.2152E-04
410	0.3305E-05	820	0.2914E-04	1230	0.2119E-04
420	0.3891E-05	830	0.2988E-04	1240	0.2388E-04
430	0.4464E-05	840	0.3425E-04	1250	0.2390E-04
440	0.5108E-05	850	0.3350E-04	1260	0.2411E-04
450	0.5652E-05	860	0.3323E-04	1270	0.1910E-04
460	0.6314E-05	870	0.3343E-04	1280	0.2037E-04
470	0.7054E-05	880	0.3583E-04	1290	0.1996E-04
480	0.7739E-05	890	0.3020E-04	1300	0.1975E-04
490	0.8441E-05	900	0.3031E-04	1310	0.1940E-04
500	0.9151E-05	910	0.2956E-04	1320	0.1899E-04
510	0.9993E-05	920	0.3022E-04	1330	0.1921E-04
520	0.1081E-04	930	0.2830E-04	1340	0.2071E-04
530	0.1159E-04	940	0.2510E-04	1350	0.1813E-04
540	0.1230E-04	950	0.2538E-04	1360	0.1752E-04
550	0.1338E-04	960	0.3032E-04	1370	0.1721E-04
560	0.1407E-04	970	0.2518E-04	1380	0.1790E-04
570	0.1466E-04	980	0.2553E-04	1390	0.1785E-04
580	0.1590E-04	990	0.2468E-04		
590	0.1669E-04	1000	0.2457E-04		
600	0.1726E-04	1010	0.2520E-04		
610	0.1782E-04	1020	0.2510E-04		
620	0.1849E-04	1030	0.2471E-04		
630	0.1918E-04	1040	0.2478E-04		


SPECTRAL IRRADIANCE FOR LAMP TYPE FCV 1000W.
SAMPLE NO. 0015
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: EER 2000W.

DATE TESTED: JAN 5, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 623.7 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1121E 08 UW CM**-2SR**-1

I (ACGIH) = 0.8420E-07 W CM**-2

TIME (ACGIH) = 0.3563E+05 SECONDS

REMARKS:

QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

SAMPLE NUMBER: 0016

TIME OF DAY: 1446

IRRADIANCES:

E (260-320) = 0.1531E-05 W CM**-2

E (320-400) = 0.7753E-04 W CM**-2

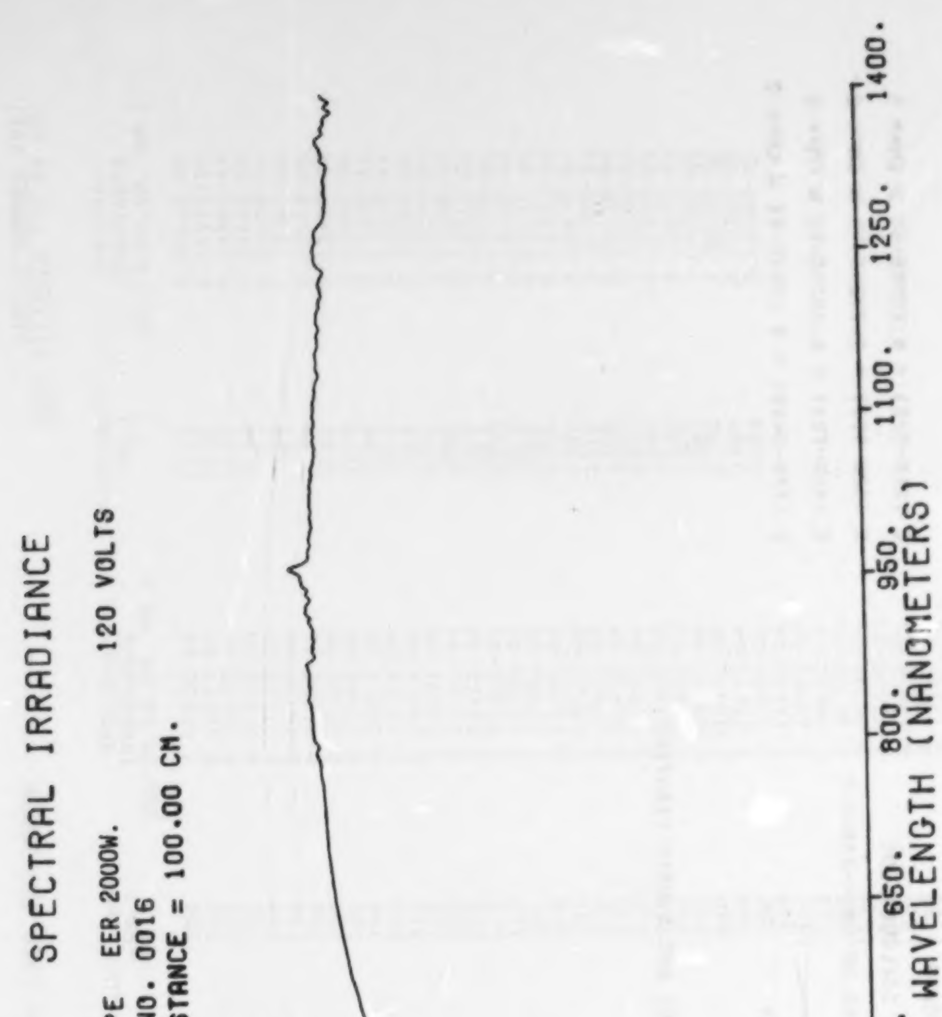
E (400-700) = 0.2598E-02 W CM**-2

E (700-1400) = 0.1199E-01 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE EER 2000W.

SAMPLE NUMBER 0016
TEST DISTANCE 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
290	0.3704E-08	700	0.1516E-04	1110	0.1761E-04
300	0.1984E-07	710	0.1533E-04	1120	0.1691E-04
310	0.7393E-07	720	0.1551E-04	1130	0.1668E-04
320	0.1739E-06	730	0.1570E-04	1140	0.1579E-04
330	0.3205E-06	740	0.1584E-04	1150	0.1616E-04
340	0.4616E-06	750	0.1603E-04	1160	0.1649E-04
350	0.6585E-06	760	0.1626E-04	1170	0.1589E-04
360	0.9391E-06	770	0.1682E-04	1180	0.1551E-04
370	0.1210E-05	780	0.1700E-04	1190	0.1606E-04
380	0.1473E-05	790	0.1826E-04	1200	0.1530E-04
390	0.1731E-05	800	0.1826E-04	1210	0.1480E-04
400	0.1979E-05	810	0.1918E-04	1220	0.1512E-04
410	0.2379E-05	820	0.1928E-04	1230	0.1448E-04
420	0.2761E-05	830	0.1966E-04	1240	0.1598E-04
430	0.3156E-05	840	0.2078E-04	1250	0.1642E-04
440	0.3475E-05	850	0.2008E-04	1260	0.1605E-04
450	0.3819E-05	860	0.2029E-04	1270	0.1619E-04
460	0.4264E-05	870	0.2102E-04	1280	0.1412E-04
470	0.4760E-05	880	0.1850E-04	1290	0.1333E-04
480	0.5234E-05	890	0.1910E-04	1300	0.1310E-04
490	0.5702E-05	900	0.1895E-04	1310	0.1333E-04
500	0.6155E-05	910	0.2004E-04	1320	0.1347E-04
510	0.6708E-05	920	0.2145E-04	1330	0.1275E-04
520	0.7183E-05	930	0.2021E-04	1340	0.1387E-04
530	0.7695E-05	940	0.2073E-04	1350	0.1488E-04
540	0.8186E-05	950	0.2322E-04	1360	0.1383E-04
550	0.8761E-05	960	0.2840E-04	1370	0.1318E-04
560	0.9236E-05	970	0.2029E-04	1380	0.1182E-04
570	0.9644E-05	980	0.1966E-04	1390	0.1201E-04
580	0.1024E-04	990	0.1962E-04		
590	0.1030E-04	1000	0.1884E-04		
600	0.1120E-04	1010	0.1924E-04		
610	0.1164E-04	1020	0.1936E-04		
620	0.1208E-04	1030	0.1916E-04		
630	0.1252E-04	1040	0.1904E-04		
640	0.1295E-04	1050	0.1860E-04		
650	0.1343E-04	1060	0.1784E-04		
660	0.1380E-04	1070	0.1749E-04		
670	0.1421E-04	1080	0.1783E-04		
680	0.1446E-04	1090	0.1776E-04		
690	0.1479E-04	1100	0.1777E-04		



SPECTRAL IRRADIANCE
LAMP TYPE EER 2000W. 120 VOLTS
SAMPLE NO. 0016
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10⁻³
10⁻⁴
10⁻⁵
10⁻⁶
10⁻⁷
10⁻⁸
10⁻⁹
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: EER 2000W.

DATE TESTED: JAN 5, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 606.4 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1123E 08 UW CM**-2SR**-1

I (ACGIH) = 0.7497E-07 W CM**-2

TIME (ACGIH) = 0.4002E+05 SECONDS

SAMPLE NUMBER: 0017

TIME OF DAY: 1633

IRRADIANCES:

E (260-320) = 0.1298E-05 W CM**-2

E (320-400) = 0.7026E-04 W CM**-2

E (400-700) = 0.2535E-02 W CM**-2

E (700-1400) = 0.1089E-01 W CM**-2

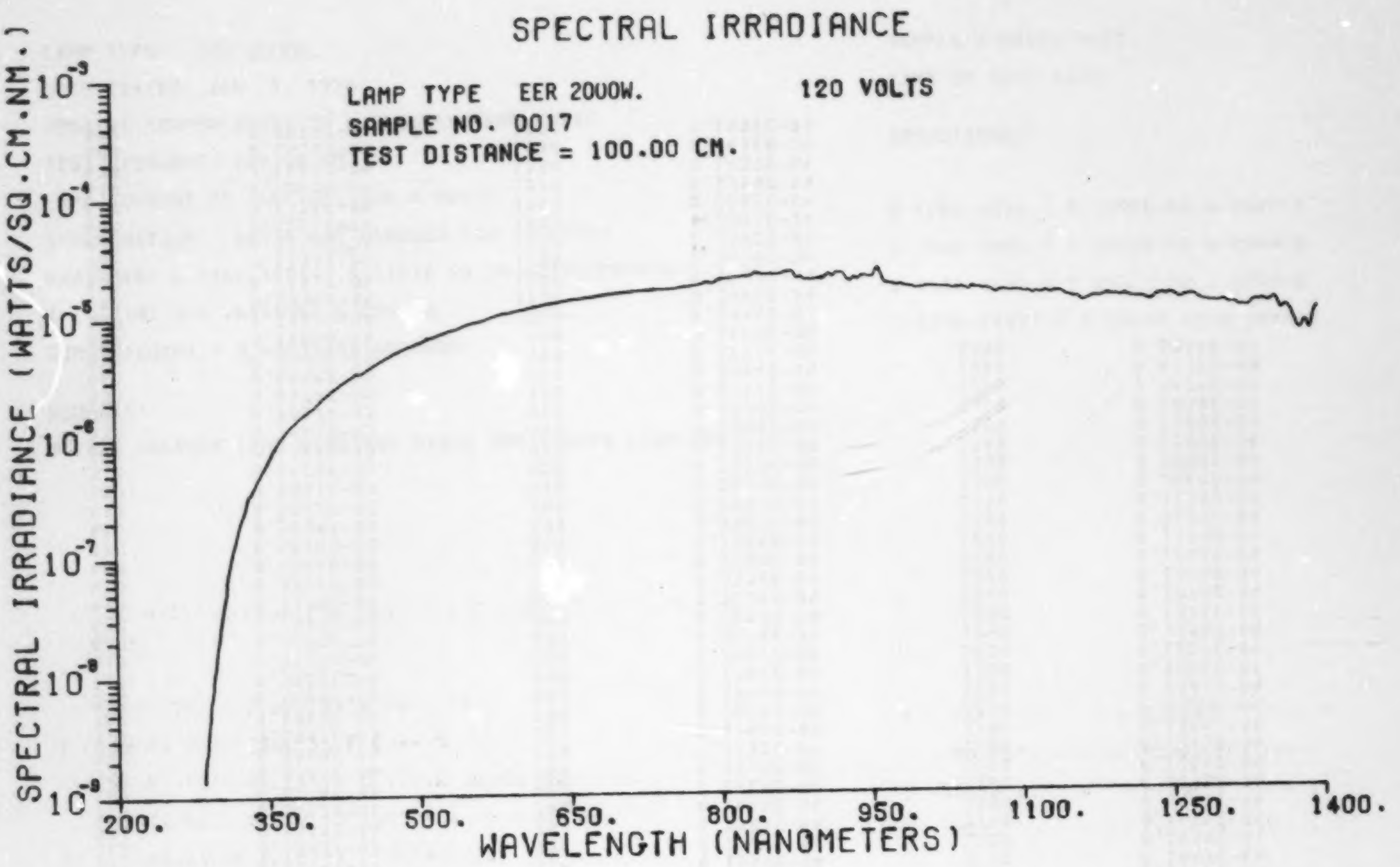
REMARKS:

QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

SAMPLE NUMBER 0017
TEST DISTANCE 100.00 CM.

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE EER 2000W.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
290	0.3542E-08	700	0.1513E-04	1110	0.1461E-04
300	0.1724E-07	710	0.1540E-04	1120	0.1447E-04
310	0.6503E-07	720	0.1567E-04	1130	0.1450E-04
320	0.1448E-06	730	0.1593E-04	1140	0.1466E-04
330	0.2662E-06	740	0.1614E-04	1150	0.1347E-04
340	0.4076E-06	750	0.1625E-04	1160	0.1298E-04
350	0.5789E-06	760	0.1653E-04	1170	0.1266E-04
360	0.8409E-06	770	0.1711E-04	1180	0.1313E-04
370	0.1091E-05	780	0.1749E-04	1190	0.1380E-04
380	0.1343E-05	790	0.1851E-04	1200	0.1338E-04
390	0.1589E-05	800	0.1896E-04	1210	0.1327E-04
400	0.1825E-05	810	0.1981E-04	1220	0.1286E-04
410	0.2213E-05	820	0.2029E-04	1230	0.1227E-04
420	0.2578E-05	830	0.2078E-04	1240	0.1355E-04
430	0.2949E-05	840	0.2216E-04	1250	0.1371E-04
440	0.3370E-05	850	0.2130E-04	1260	0.1272E-04
450	0.3556E-05	860	0.2132E-04	1270	0.1328E-04
460	0.4046E-05	870	0.2240E-04	1280	0.1243E-04
470	0.4518E-05	880	0.1984E-04	1290	0.1179E-04
480	0.5039E-05	890	0.1923E-04	1300	0.1169E-04
490	0.5502E-05	900	0.1942E-04	1310	0.1130E-04
500	0.5911E-05	910	0.2074E-04	1320	0.1069E-04
510	0.6426E-05	920	0.2179E-04	1330	0.1085E-04
520	0.6865E-05	930	0.1916E-04	1340	0.1192E-04
530	0.7363E-05	940	0.1930E-04	1350	0.1160E-04
540	0.7837E-05	950	0.2029E-04	1360	0.1038E-04
550	0.8474E-05	960	0.2347E-04	1370	0.9870E-05
560	0.8948E-05	970	0.1764E-04	1380	0.6737E-05
570	0.9402E-05	980	0.1704E-04	1390	0.6816E-05
580	0.1006E-04	990	0.1668E-04		
590	0.1057E-04	1000	0.1596E-04		
600	0.1098E-04	1010	0.1660E-04		
610	0.1141E-04	1020	0.1639E-04		
620	0.1193E-04	1030	0.1619E-04		
630	0.1238E-04	1040	0.1592E-04		
640	0.1280E-04	1050	0.1544E-04		
650	0.1326E-04	1060	0.1585E-04		
660	0.1363E-04	1070	0.1554E-04		
670	0.1401E-04	1080	0.1459E-04		
680	0.1431E-04	1090	0.1496E-04		
690	0.1474E-04	1100	0.1491E-04		


SPECTRAL IRRADIANCE
LAMP TYPE EER 2000W.
120 VOLTS
SAMPLE NO. 0017
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-3
10^-4
10^-5
10^-6
10^-7
10^-8
10^-9
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: EER 2000W.

DATE TESTED: JAN 5, 1978

AMBIENT TEMPERATURE: 76.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 624.6 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1137E 08 UW CM**-2SR**-1

I (ACGIH) = 0.7884E-07 W CM**-2

TIME (ACGIH) = 0.3805E+05 SECONDS

<u>REMARKS</u>:

QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

SAMPLE NUMBER: 0018

TIME OF DAY: 1825

<u>IRRADIANCES</u>:

E (260-320) = 0.1570E-05 W CM**-2

E (320-400) = 0.7560E-04 W CM**-2

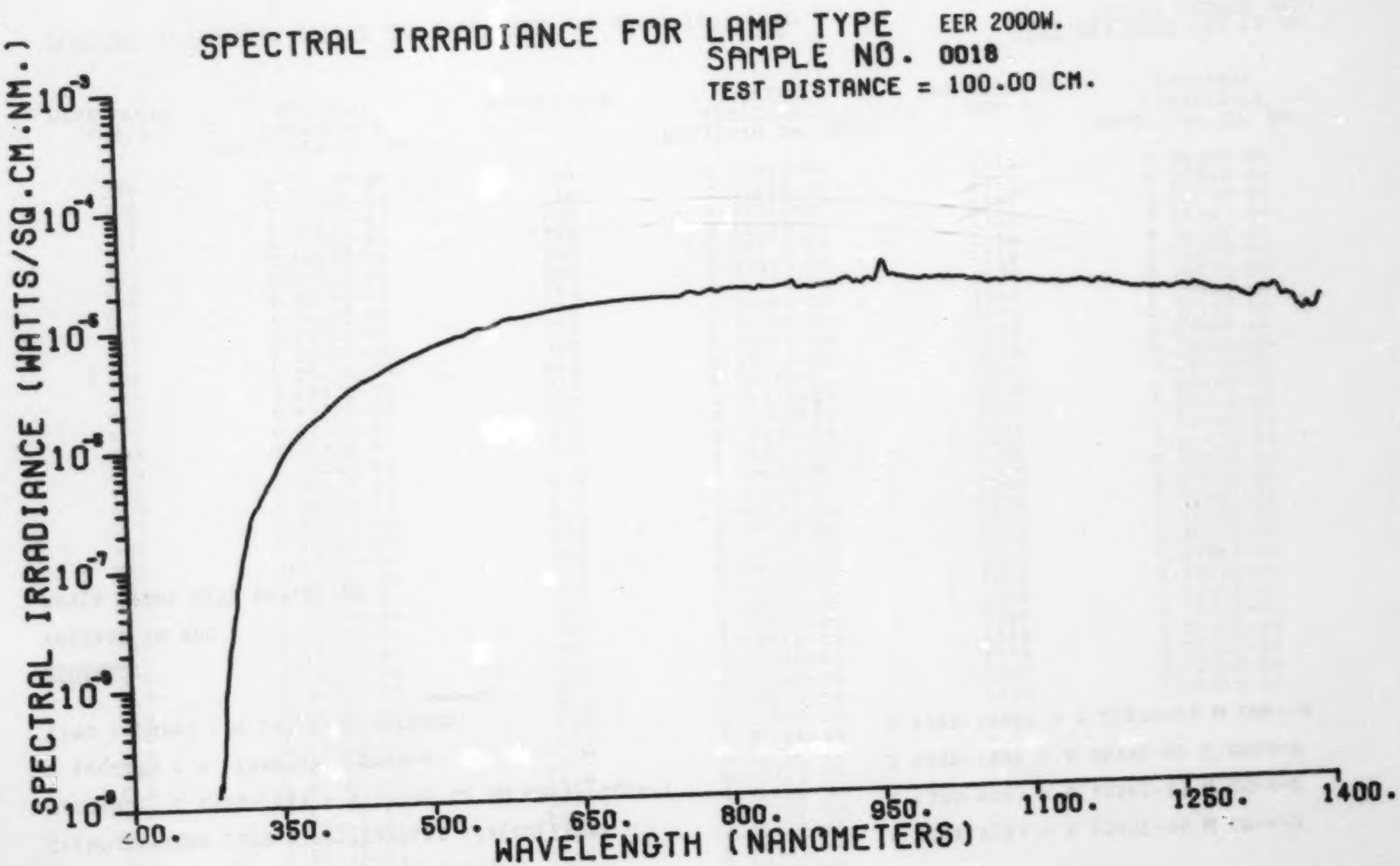
E (400-700) = 0.2579E-02 W CM**-2

E (700-1400) = 0.1109E-01 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE EER 2000W.

SAMPLE NUMBER 0018
TEST DISTANCE 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
290	0.2390E-08	700	0.1468E-04	1110	0.1712E-04
300	0.2028E-07	710	0.1476E-04	1120	0.1628E-04
310	0.7345E-07	720	0.1493E-04	1130	0.1627E-04
320	0.1776E-06	730	0.1503E-04	1140	0.1570E-04
330	0.3239E-06	740	0.1506E-04	1150	0.1602E-04
340	0.4494E-06	750	0.1510E-04	1160	0.1657E-04
350	0.6294E-06	760	0.1523E-04	1170	0.1532E-04
360	0.9099E-06	770	0.1647E-04	1180	0.1608E-04
370	0.1174E-05	780	0.1572E-04	1190	0.1535E-04
380	0.1429E-05	790	0.1713E-04	1200	0.1458E-04
390	0.1687E-05	800	0.1682E-04	1210	0.1400E-04
400	0.1939E-05	810	0.1737E-04	1220	0.1392E-04
410	0.2348E-05	820	0.1751E-04	1230	0.1363E-04
420	0.2741E-05	830	0.1736E-04	1240	0.1391E-04
430	0.3133E-05	840	0.1789E-04	1250	0.1334E-04
440	0.3546E-05	850	0.1731E-04	1260	0.1424E-04
450	0.3823E-05	860	0.1782E-04	1270	0.1402E-04
460	0.4258E-05	870	0.1894E-04	1280	0.1386E-04
470	0.4753E-05	880	0.1698E-04	1290	0.1273E-04
480	0.5235E-05	890	0.1706E-04	1300	0.1254E-04
490	0.5694E-05	900	0.1752E-04	1310	0.1220E-04
500	0.6150E-05	910	0.1809E-04	1320	0.1136E-04
510	0.6697E-05	920	0.1933E-04	1330	0.1092E-04
520	0.7168E-05	930	0.1894E-04	1340	0.1295E-04
530	0.7697E-05	940	0.1787E-04	1350	0.1324E-04
540	0.8129E-05	950	0.1913E-04	1360	0.1085E-04
550	0.8893E-05	960	0.2654E-04	1370	0.1069E-04
560	0.9260E-05	970	0.2030E-04	1380	0.8198E-05
570	0.9476E-05	980	0.1965E-04	1390	0.8405E-05
580	0.1049E-04	990	0.1900E-04		
590	0.1105E-04	1000	0.1851E-04		
600	0.1124E-04	1010	0.1851E-04		
610	0.1158E-04	1020	0.1902E-04		
620	0.1202E-04	1030	0.1876E-04		
630	0.1241E-04	1040	0.1851E-04		
640	0.1280E-04	1050	0.1778E-04		
650	0.1320E-04	1060	0.1771E-04		
660	0.1352E-04	1070	0.1704E-04		
670	0.1386E-04	1080	0.1672E-04		
680	0.1410E-04	1090	0.1736E-04		
690	0.1438E-04	1100	0.1662E-04		


SPECTRAL IRRADIANCE FOR LAMP TYPE EER 2000W.
SAMPLE NO. 0018
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: FAE MOVIE LITE 550W.

DATE TESTED: JAN 5, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 1322.0 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.3770E 07 UW CM**-2SR**-1

I (ACGIH) = 0.2799E-07 W CM**-2

TIME (ACGIH) = 0.1072E+06 SECONDS

REMARKS:

VOLTAGE IN VDC

MOVIE LIGHT WITH REFLECTOR

SAMPLE NUMBER: 0025

TIME OF DAY: 804

IRRADIANCES:

E (260-320) = 0.4584E-06 W CM**-2

E (320-400) = 0.1236E-03 W CM**-2

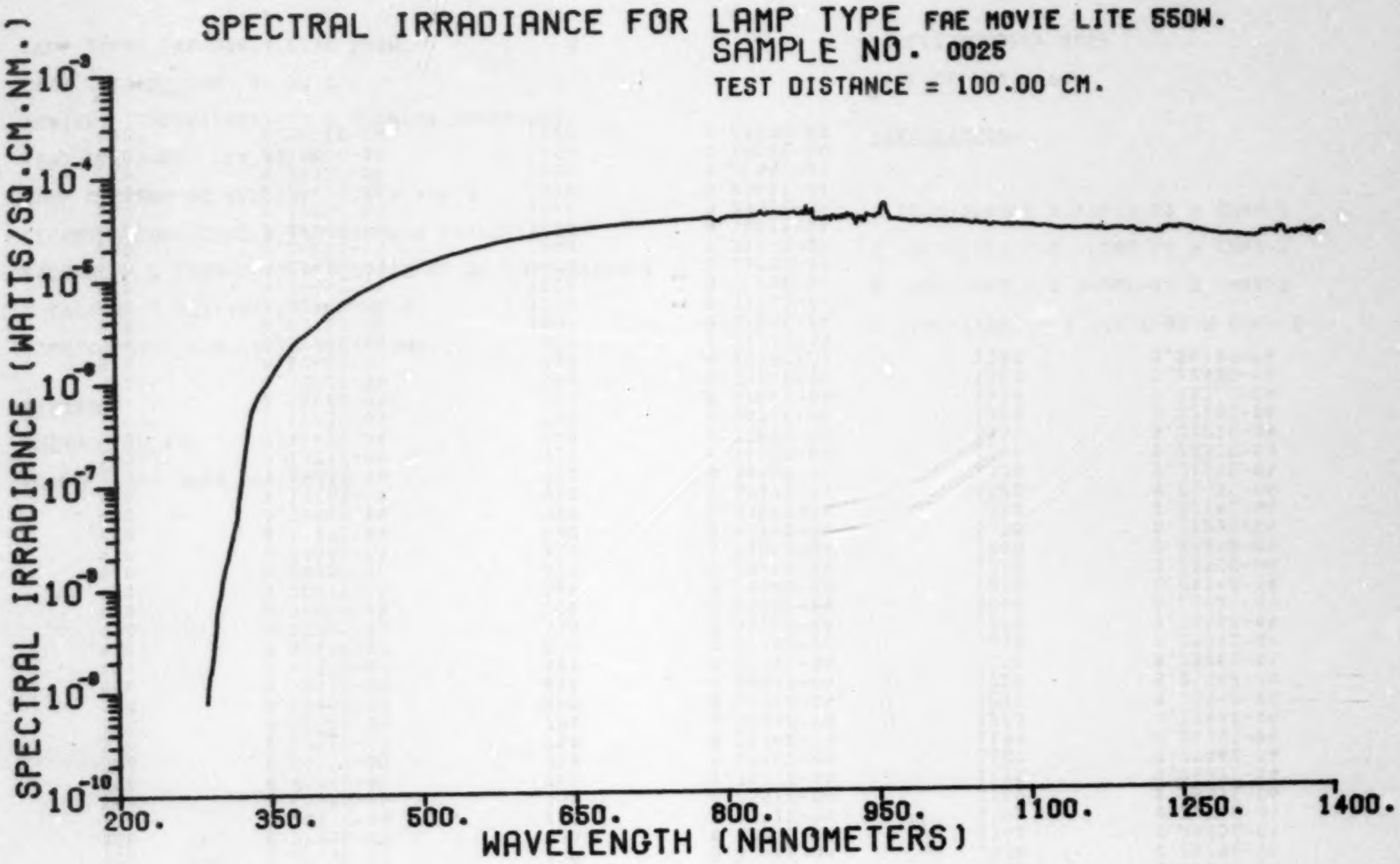
E (400-700) = 0.5439E-02 W CM**-2

E (700-1400) = 0.2107E-01 W CM**-2

SAMPLE NUMBER 0025
TEST DISTANCE 100.00 CM.

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE FAE MOVIE LITE 550W.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
290	0.1441E-08	700	0.3147E-04	1110	0.2829E-04
300	0.7384E-08	710	0.3184E-04	1120	0.2794E-04
310	0.2001E-07	720	0.3236E-04	1130	0.2679E-04
320	0.5735E-07	730	0.3282E-04	1140	0.2655E-04
330	0.2907E-06	740	0.3321E-04	1150	0.2611E-04
340	0.6950E-06	750	0.3361E-04	1160	0.2687E-04
350	0.9684E-06	760	0.3427E-04	1170	0.2607E-04
360	0.1413E-05	770	0.3466E-04	1180	0.2546E-04
370	0.1931E-05	780	0.3534E-04	1190	0.2619E-04
380	0.2508E-05	790	0.3604E-04	1200	0.2548E-04
390	0.2965E-05	800	0.3516E-04	1210	0.2554E-04
400	0.3543E-05	810	0.3643E-04	1220	0.2444E-04
410	0.4432E-05	820	0.3671E-04	1230	0.2376E-04
420	0.5263E-05	830	0.3736E-04	1240	0.2594E-04
430	0.6152E-05	840	0.4012E-04	1250	0.2646E-04
440	0.7095E-05	850	0.3898E-04	1260	0.2642E-04
450	0.7887E-05	860	0.3900E-04	1270	0.2474E-04
460	0.8875E-05	870	0.3922E-04	1280	0.2393E-04
470	0.9980E-05	880	0.4004E-04	1290	0.2280E-04
480	0.1105E-04	890	0.4274E-04	1300	0.2225E-04
490	0.1206E-04	900	0.3357E-04	1310	0.2214E-04
500	0.1305E-04	910	0.3617E-04	1320	0.2147E-04
510	0.1422E-04	920	0.3645E-04	1330	0.2155E-04
520	0.1524E-04	930	0.3683E-04	1340	0.2350E-04
530	0.1643E-04	940	0.3282E-04	1350	0.2321E-04
540	0.1742E-04	950	0.3591E-04	1360	0.2210E-04
550	0.1860E-04	960	0.4768E-04	1370	0.2318E-04
560	0.1962E-04	970	0.3336E-04	1380	0.2290E-04
570	0.2068E-04	980	0.3253E-04	1390	0.2400E-04
580	0.2180E-04	990	0.3194E-04		
590	0.2276E-04	1000	0.3164E-04		
600	0.2370E-04	1010	0.3176E-04		
610	0.2454E-04	1020	0.3175E-04		
620	0.2545E-04	1030	0.3185E-04		
630	0.2626E-04	1040	0.3124E-04		
640	0.2706E-04	1050	0.3001E-04		
650	0.2794E-04	1060	0.2991E-04		
660	0.2867E-04	1070	0.2986E-04		
670	0.2937E-04	1080	0.2844E-04		
680	0.3004E-04	1090	0.2901E-04		
690	0.3076E-04	1100	0.2855E-04		


SPECTRAL IRRADIANCE FOR LAMP TYPE FAE MOVIE LITE 550W.
SAMPLE NO. 0025
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: FAE MOVIE LITE 550W.

DATE TESTED: JAN 5, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 1308.8 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.3930E 07 UW CM**-2SR**-1

I (ACGIH) = 0.5530E-07 W CM**-2

TIME (ACGIH) = 0.5425E+05 SECONDS

REMARKS:

VOLTAGE IN VDC

MOVIE LIGHT WITH REFLECTOR

SAMPLE NUMBER: 0026

TIME OF DAY: 1027

IRRADIANCES:

E (260-320) = 0.1032E-05 W CM**-2

E (320-400) = 0.1271E-03 W CM**-2

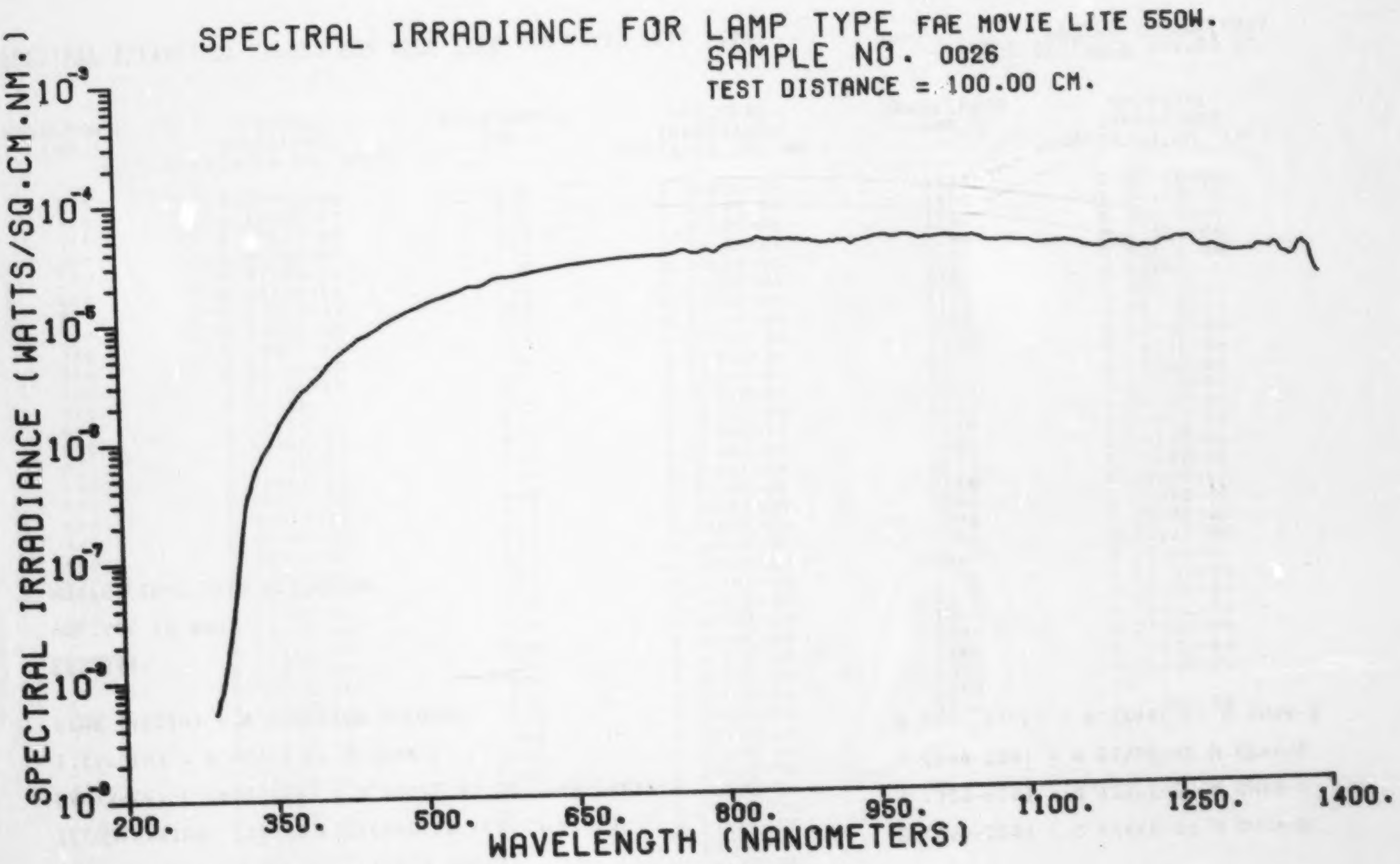
E (400-700) = 0.5376E-02 W CM**-2

E (700-1400) = 0.2503E-01 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE FAE MOVIE LITE 550W.

SAMPLE NUMBER 0026
TEST DISTANCE 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
290	0.5430E-08	700	0.3087E-04	1110	0.3692E-04
300	0.1166E-07	710	0.3127E-04	1120	0.3535E-04
310	0.3621E-07	720	0.3167E-04	1130	0.3572E-04
320	0.1716E-06	730	0.3204E-04	1140	0.3603E-04
330	0.4528E-06	740	0.3234E-04	1150	0.3596E-04
340	0.7225E-06	750	0.3265E-04	1160	0.3424E-04
350	0.9968E-06	760	0.3432E-04	1170	0.3238E-04
360	0.1444E-05	770	0.3429E-04	1180	0.3189E-04
370	0.1937E-05	780	0.3329E-04	1190	0.3441E-04
380	0.2506E-05	790	0.3500E-04	1200	0.3430E-04
390	0.2973E-05	800	0.3508E-04	1210	0.3291E-04
400	0.3573E-05	810	0.3840E-04	1220	0.3144E-04
410	0.4498E-05	820	0.3943E-04	1230	0.3163E-04
420	0.5349E-05	830	0.4090E-04	1240	0.3386E-04
430	0.6150E-05	840	0.4395E-04	1250	0.3567E-04
440	0.7186E-05	850	0.4165E-04	1260	0.3731E-04
450	0.7863E-05	860	0.4175E-04	1270	0.3664E-04
460	0.8840E-05	870	0.4209E-04	1280	0.3085E-04
470	0.9921E-05	880	0.4153E-04	1290	0.3153E-04
480	0.1097E-04	890	0.4089E-04	1300	0.2970E-04
490	0.1197E-04	900	0.3911E-04	1310	0.2789E-04
500	0.1297E-04	910	0.3929E-04	1320	0.2804E-04
510	0.1415E-04	920	0.4026E-04	1330	0.2828E-04
520	0.1519E-04	930	0.3832E-04	1340	0.3063E-04
530	0.1628E-04	940	0.3956E-04	1350	0.3038E-04
540	0.1731E-04	950	0.4156E-04	1360	0.2737E-04
550	0.1883E-04	960	0.4330E-04	1370	0.2509E-04
560	0.1898E-04	970	0.4294E-04	1380	0.3275E-04
570	0.2050E-04	980	0.4281E-04	1390	0.2256E-04
580	0.2217E-04	990	0.4324E-04		
590	0.2238E-04	1000	0.4051E-04		
600	0.2304E-04	1010	0.4123E-04		
610	0.2402E-04	1020	0.4205E-04		
620	0.2502E-04	1030	0.4213E-04		
630	0.2584E-04	1040	0.4158E-04		
640	0.2666E-04	1050	0.4164E-04		
650	0.2754E-04	1060	0.4055E-04		
660	0.2822E-04	1070	0.3780E-04		
670	0.2888E-04	1080	0.3750E-04		
680	0.2950E-04	1090	0.3783E-04		
690	0.3021E-04	1100	0.3716E-04		


SPECTRAL IRRADIANCE FOR LAMP TYPE FAE MOVIE LITE 550W.
SAMPLE NO. 0026
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
WAVELENGTH (NANOMETERS)
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.

LAMP TYPE: FAE MOVIE LITE 550W.

DATE TESTED: JAN 5, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 1310.9 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.3962E 07 UW CM**-2SR**-1

I (ACGIH) = 0.4491E-07 W CM**-2

TIME (ACGIH) = 0.6680E+05 SECONDS

<u>REMARKS</u>:

VOLTAGE IN VDC

MOVIE LIGHT WITH REFLECTOR

SAMPLE NUMBER: 0027

TIME OF DAY: 1218

<u>IRRADIANCES</u>:

E (260-320) = 0.6766E-06 W CM**-2

E (320-400) = 0.1257E-03 W CM**-2

E (400-700) = 0.5398E-02 W CM**-2

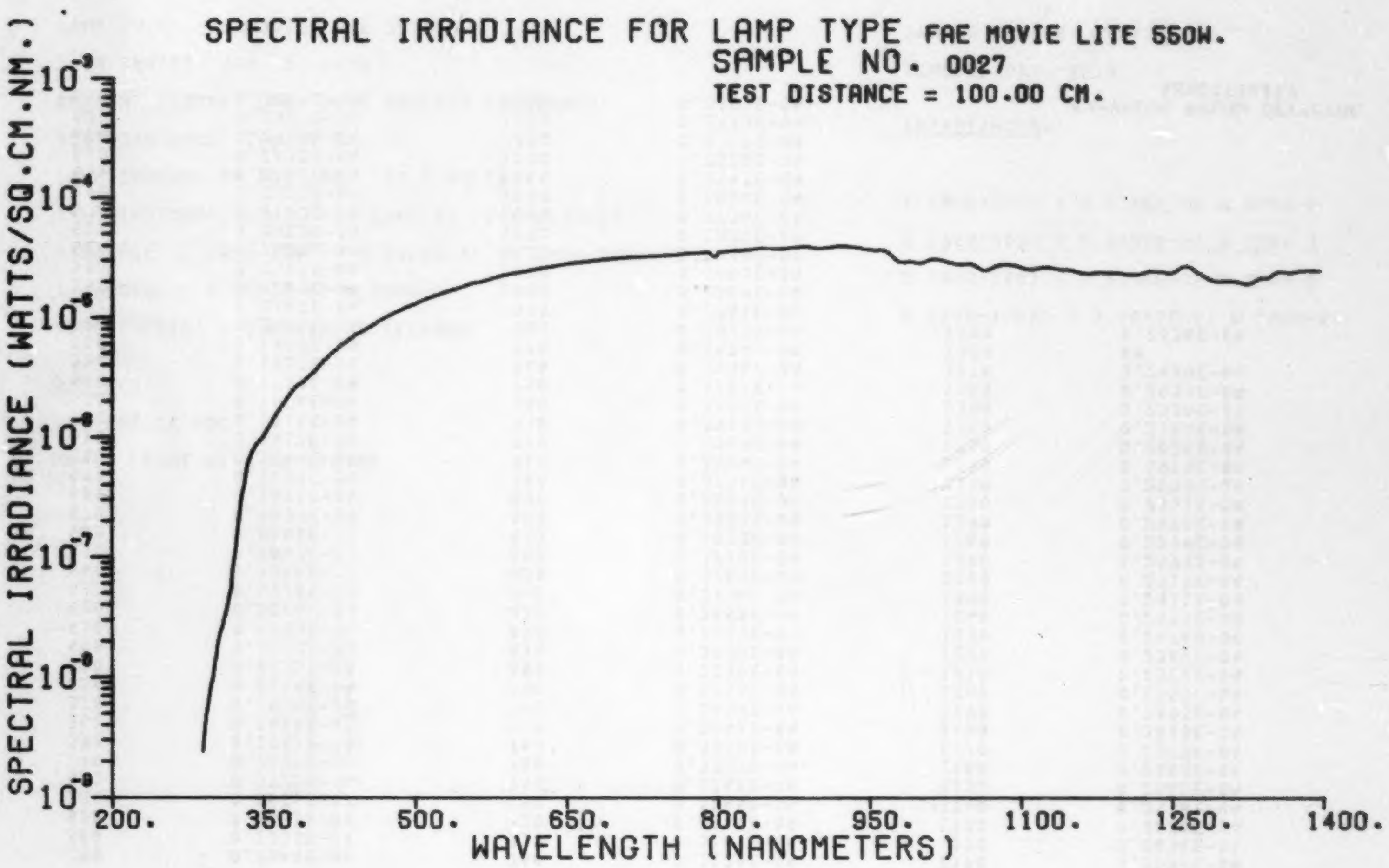
E (700-1400) = 0.2049E-01 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE FAE MOVIE LITE 550W.

SAMPLE NUMBER 0027
TEST DISTANCE 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
290	0.2544E-08	700	0.3126E-04	1110	0.2552E-04
300	0.1053E-07	710	0.3160E-04	1120	0.2631E-04
310	0.2861E-07	720	0.3210E-04	1130	0.2630E-04
320	0.8636E-07	730	0.3245E-04	1140	0.2538E-04
330	0.3725E-06	740	0.3268E-04	1150	0.2508E-04
340	0.7899E-06	750	0.3307E-04	1160	0.2389E-04
350	0.1017E-05	760	0.3352E-04	1170	0.2372E-04
360	0.1428E-05	770	0.3446E-04	1180	0.2410E-04
370	0.1935E-05	780	0.3459E-04	1190	0.2393E-04
380	0.2504E-05	790	0.3505E-04	1200	0.2355E-04
390	0.2938E-05	800	0.3530E-04	1210	0.2322E-04
400	0.3508E-05	810	0.3592E-04	1220	0.2382E-04
410	0.4383E-05	820	0.3639E-04	1230	0.2476E-04
420	0.5224E-05	830	0.3698E-04	1240	0.2454E-04
430	0.6078E-05	840	0.3796E-04	1250	0.2411E-04
440	0.7066E-05	850	0.3784E-04	1260	0.2710E-04
450	0.7843E-05	860	0.3770E-04	1270	0.2599E-04
460	0.8801E-05	870	0.3820E-04	1280	0.2299E-04
470	0.9899E-05	880	0.3903E-04	1290	0.2078E-04
480	0.1096E-04	890	0.3889E-04	1300	0.2051E-04
490	0.1198E-04	900	0.3794E-04	1310	0.2055E-04
500	0.1294E-04	910	0.3874E-04	1320	0.1975E-04
510	0.1412E-04	920	0.3969E-04	1330	0.2028E-04
520	0.1516E-04	930	0.3930E-04	1340	0.2182E-04
530	0.1626E-04	940	0.3848E-04	1350	0.2356E-04
540	0.1727E-04	950	0.3727E-04	1360	0.2453E-04
550	0.1850E-04	960	0.3696E-04	1370	0.2450E-04
560	0.1949E-04	970	0.3404E-04	1380	**
570	0.2036E-04	980	0.2922E-04	1390	0.2536E-04
580	0.2160E-04	990	0.2941E-04		
590	0.2262E-04	1000	0.2869E-04		
600	0.2345E-04	1010	0.3063E-04		
610	0.2432E-04	1020	0.3039E-04		
620	0.2522E-04	1030	0.2879E-04		
630	0.2605E-04	1040	0.2796E-04		
640	0.2692E-04	1050	0.2820E-04		
650	0.2783E-04	1060	0.2547E-04		
660	0.2855E-04	1070	0.2588E-04		
670	0.2918E-04	1080	0.2779E-04		
680	0.2982E-04	1090	0.2779E-04		
690	0.3054E-04	1100	0.2653E-04		

**-VALUE BELOW DETECTOR SENSITIVITY


SPECTRAL IRRADIANCE FOR LAMP TYPE FAE MOVIE LITE 550W.
SAMPLE NO. 0027
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: DXT 1000W.

DATE TESTED: DEC 22, 1977

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 115.0 VOLTS

ILLUMINATION: 186.7 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.7246E 06 UW CM**-2SR**-1

I (ACGIH) = 0.2896E-09 W CM**-2

TIME (ACGIH) = 0.1036E+08 SECONDS

<u>REMARKS</u>:

VOLTAGE IN VDC

FLOOD LAMP

SAMPLE NUMBER: 0028

TIME OF DAY: 1717

<u>IRRADIANCES</u>:

E (260-320) = 0.8353E-08 W CM**-2

E (320-400) = 0.2863E-04 W CM**-2

E (400-700) = 0.7352E-03 W CM**-2

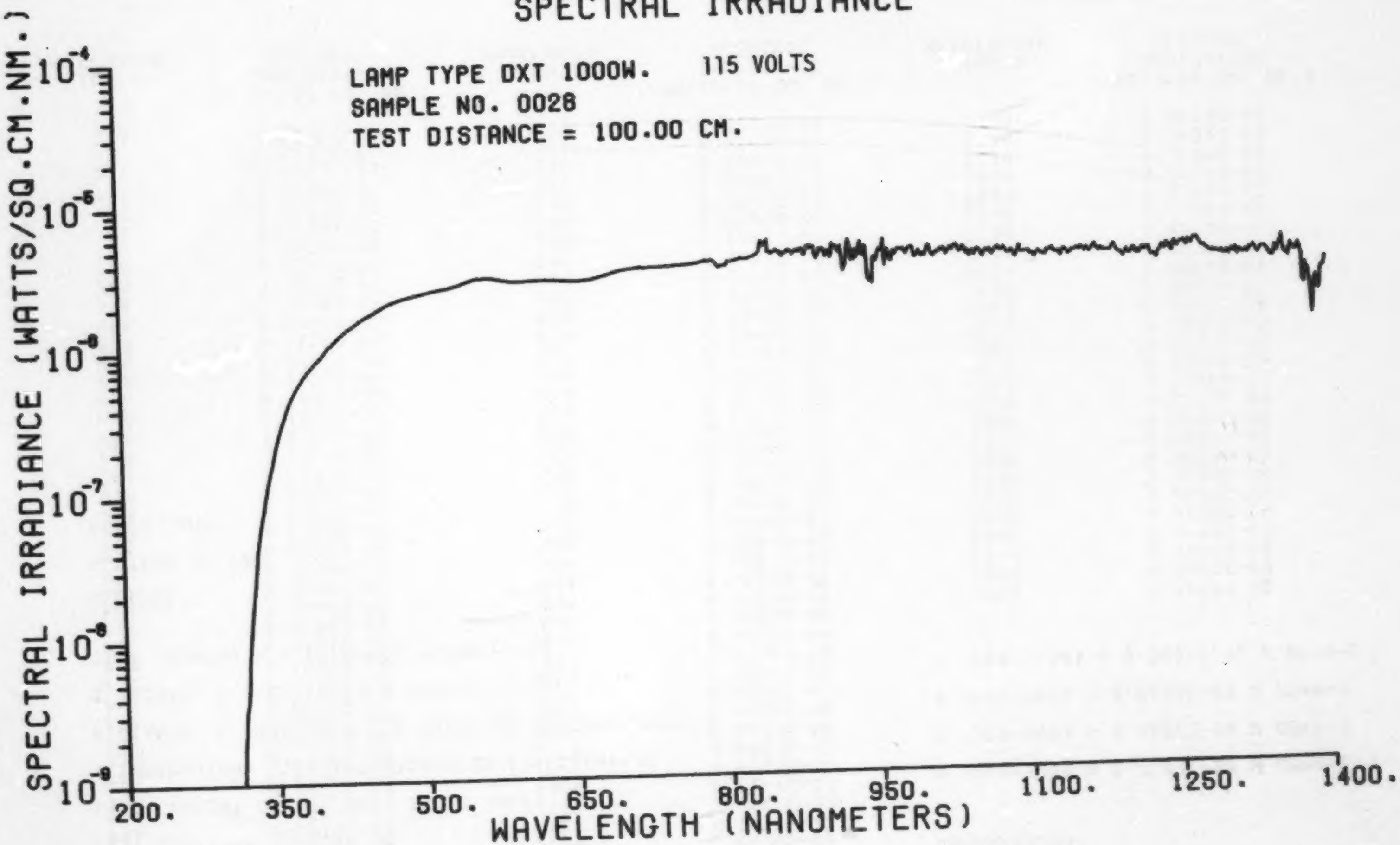
E (700-1400) = 0.2541E-02 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE DXT 1000W.

SAMPLE NUMBER 0028
TEST DISTANCE 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
320	0.3590E-08	730	0.3329E-05	1140	0.3739E-05
330	0.2379E-07	740	0.3355E-05	1150	0.3669E-05
340	0.8062E-07	750	0.3375E-05	1160	0.3758E-05
350	0.1710E-06	760	0.3426E-05	1170	0.3962E-05
360	0.3164E-06	770	0.3461E-05	1180	0.3653E-05
370	0.4727E-06	780	0.3567E-05	1190	0.3979E-05
380	0.6220E-06	790	0.3658E-05	1200	0.3301E-05
390	0.7675E-06	800	0.3304E-05	1210	0.3709E-05
400	0.9034E-06	810	0.3581E-05	1220	0.3641E-05
410	0.1087E-05	820	0.3713E-05	1230	0.3349E-05
420	0.1258E-05	830	0.3823E-05	1240	0.3645E-05
430	0.1427E-05	840	0.4768E-05	1250	0.3973E-05
440	0.1602E-05	850	0.3994E-05	1260	0.4073E-05
450	0.1739E-05	860	0.3828E-05	1270	0.4235E-05
460	0.1909E-05	870	0.3950E-05	1280	0.3745E-05
470	0.2068E-05	880	0.4182E-05	1290	0.3406E-05
480	0.2195E-05	890	0.4279E-05	1300	0.3240E-05
490	0.2292E-05	900	0.4219E-05	1310	0.3449E-05
500	0.2371E-05	910	0.4365E-05	1320	0.3331E-05
510	0.2465E-05	920	0.3573E-05	1330	0.3617E-05
520	0.2541E-05	930	0.3934E-05	1340	0.3613E-05
530	0.2619E-05	940	0.3840E-05	1350	0.3538E-05
540	0.2733E-05	950	0.2592E-05	1360	0.3236E-05
550	0.2899E-05	960	0.4242E-05	1370	0.3398E-05
560	0.2976E-05	970	0.3741E-05	1380	0.2294E-05
570	0.2998E-05	980	0.4019E-05	1390	0.2121E-05
580	0.2911E-05	990	0.4052E-05	1400	0.3061E-05
590	0.2810E-05	1000	0.3684E-05		
600	0.2801E-05	1010	0.3586E-05		
610	0.2834E-05	1020	0.3970E-05		
620	0.2847E-05	1030	0.3969E-05		
630	0.2829E-05	1040	0.4103E-05		
640	0.2800E-05	1050	0.3790E-05		
650	0.2775E-05	1060	0.3486E-05		
660	0.2779E-05	1070	0.3639E-05		
670	0.2830E-05	1080	0.3907E-05		
680	0.2945E-05	1090	0.3679E-05		
690	0.3084E-05	1100	0.3665E-05		
700	0.3226E-05	1110	0.3576E-05		
710	0.3281E-05	1120	0.3480E-05		
720	0.3336E-05	1130	0.3678E-05		

SPECTRAL IRRADIANCE



LAMP TYPE: DXT 1000W.

DATE TESTED: DEC 22, 1977

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 115.0 VOLTS

ILLUMINATION: 168.6 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.5610E 06 UW CM**-2SR**-1

I (ACGIH) = 0.2804E-09 W CM**-2

TIME (ACGIH) = 0.1070E+08 SECONDS

REMARKS:

VOLTAGE IN VDC

FLOOD LAMP

SAMPLE NUMBER: 0029

TIME OF DAY: 1947

IRRADIANCES:

E (260-320) = 0.7187E-08 W CM**-2

E (320-400) = 0.2522E-04 W CM**-2

E (400-700) = 0.6632E-03 W CM**-2

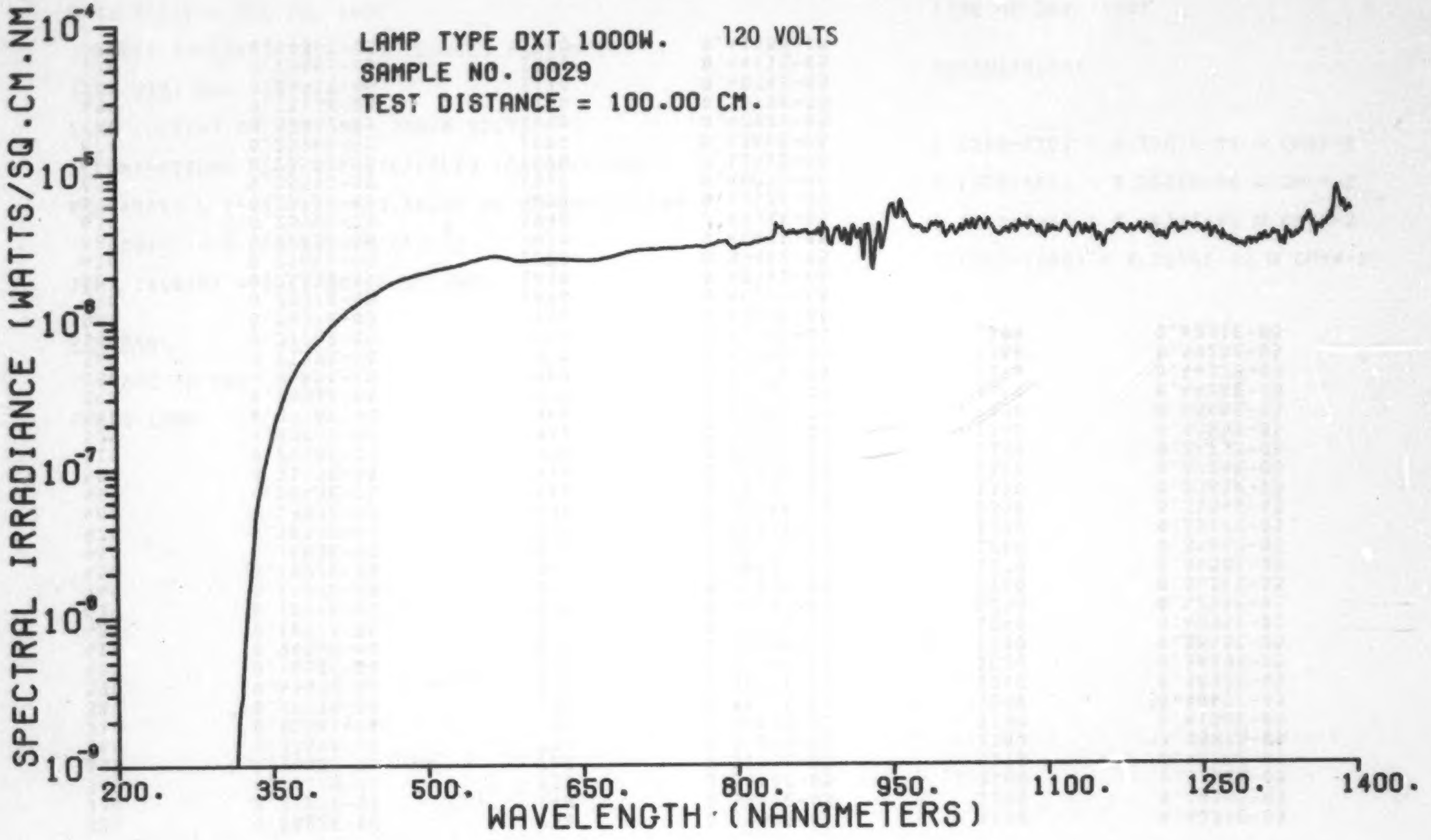
E (700-1400) = 0.2694E-02 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE DXT 1000W.

SAMPLE NUMBER 0029
TEST DISTANCE 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
320	0.2822E-08	730	0.3054E-05	1140	0.4039E-05
330	0.2129E-07	740	0.3060E-05	1150	0.3435E-05
340	0.7917E-07	750	0.3098E-05	1160	0.3751E-05
350	0.1602E-06	760	0.3148E-05	1170	0.4224E-05
360	0.2760E-06	770	0.3127E-05	1180	0.3869E-05
370	0.4138E-06	780	0.3281E-05	1190	0.4158E-05
380	0.5479E-06	790	0.3411E-05	1200	0.4062E-05
390	0.6707E-06	800	0.3079E-05	1210	0.3832E-05
400	0.7852E-06	810	0.3224E-05	1220	0.3889E-05
410	0.9458E-06	820	0.3355E-05	1230	0.3845E-05
420	0.1097E-05	830	0.3503E-05	1240	0.4294E-05
430	0.1251E-05	840	0.4349E-05	1250	0.4206E-05
440	0.1409E-05	850	0.3786E-05	1260	0.3636E-05
450	0.1527E-05	860	0.3853E-05	1270	0.3608E-05
460	0.1683E-05	870	0.3860E-05	1280	0.3486E-05
470	0.1835E-05	880	0.4087E-05	1290	0.3217E-05
480	0.1950E-05	890	0.3358E-05	1300	0.3154E-05
490	0.2045E-05	900	0.4128E-05	1310	0.3361E-05
500	0.2119E-05	910	0.3755E-05	1320	0.3724E-05
510	0.2210E-05	920	0.3916E-05	1330	0.3479E-05
520	0.2282E-05	930	0.3661E-05	1340	0.3559E-05
530	0.2358E-05	940	0.4048E-05	1350	0.4348E-05
540	0.2453E-05	950	0.5862E-05	1360	0.4426E-05
550	0.2588E-05	960	0.6387E-05	1370	0.4432E-05
560	0.2685E-05	970	0.4358E-05	1380	0.5920E-05
570	0.2726E-05	980	0.4180E-05	1390	0.6031E-05
580	0.2637E-05	990	0.4489E-05		
590	0.2537E-05	1000	0.4432E-05		
600	0.2551E-05	1010	0.4296E-05		
610	0.2586E-05	1020	0.3996E-05		
620	0.2603E-05	1030	0.4563E-05		
630	0.2590E-05	1040	0.4438E-05		
640	0.2571E-05	1050	0.4143E-05		
650	0.2554E-05	1060	0.4007E-05		
660	0.2550E-05	1070	0.4191E-05		
670	0.2596E-05	1080	0.4366E-05		
680	0.2694E-05	1090	0.4207E-05		
690	0.2813E-05	1100	0.3570E-05		
700	0.2933E-05	1110	0.4034E-05		
710	0.2988E-05	1120	0.4411E-05		
720	0.3030E-05	1130	0.4148E-05		

SPECTRAL IRRADIANCE



LAMP TYPE: DXT 1000W.

DATE TESTED: DEC 22, 1977

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 115.0 VOLTS

ILLUMINATION: 148.9 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.5268E 06 UW CM**-2SR**-1

I (ACGIH) = 0.2561E-10 W CM**-2

TIME (ACGIH) = 0.1172E+09 SECONDS

REMARKS:

VOLTAGE IN VDC

FLOOD LAMP

SAMPLE NUMBER: 0030

TIME OF DAY: 2130

IRRADIANCES:

E (260-320) = 0.1206E-07 W CM**-2

E (320-400) = 0.2442E-04 W CM**-2

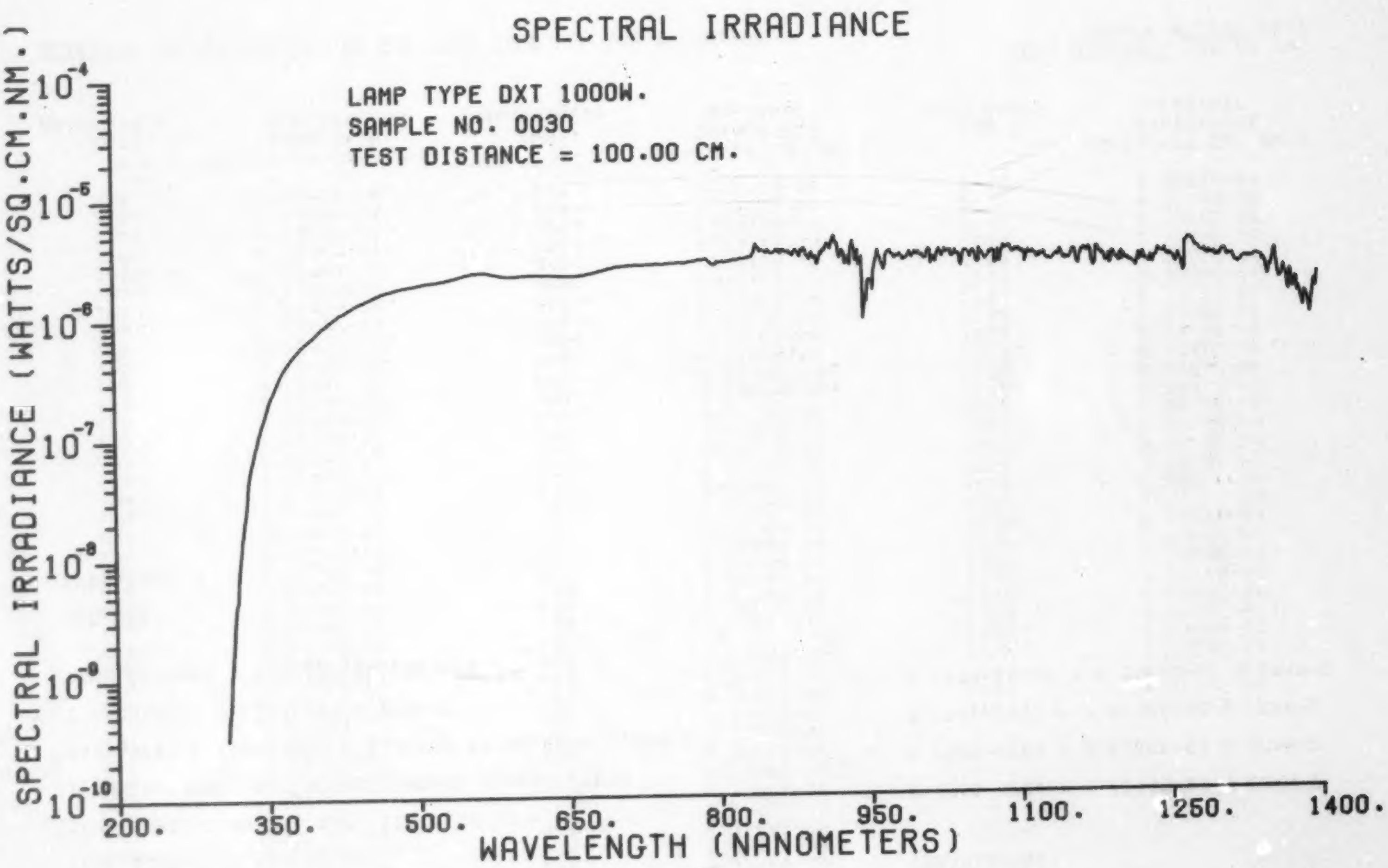
E (400-700) = 0.5889E-03 W CM**-2

E (700-1400) = 0.2014E-02 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE DXT 1000W.

SAMPLE NUMBER 0030
TEST DISTANCE 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
310	0.3628E-09	720	0.2698E-05	1130	0.2773E-05
320	0.4328E-08	730	0.2707E-05	1140	0.3091E-05
330	0.2517E-07	740	0.2729E-05	1150	0.2828E-05
340	0.8504E-07	750	0.2736E-05	1160	0.2559E-05
350	0.1614E-06	760	0.2778E-05	1170	0.3185E-05
360	0.2738E-06	770	0.2785E-05	1180	0.3426E-05
370	0.4016E-06	780	0.2886E-05	1190	0.2624E-05
380	0.5218E-06	790	0.2974E-05	1200	0.2695E-05
390	0.6378E-06	800	0.2690E-05	1210	0.2715E-05
400	0.7427E-06	810	0.2823E-05	1220	0.2648E-05
410	0.8861E-06	820	0.2913E-05	1230	0.2631E-05
420	0.1030E-05	830	0.3027E-05	1240	0.3150E-05
430	0.1152E-05	840	0.3843E-05	1250	0.2940E-05
440	0.1300E-05	850	0.3303E-05	1260	0.2880E-05
450	0.1410E-05	860	0.3468E-05	1270	0.3905E-05
460	0.1544E-05	870	0.3325E-05	1280	0.3329E-05
470	0.1671E-05	880	0.3422E-05	1290	0.2910E-05
480	0.1764E-05	890	0.3204E-05	1300	0.2891E-05
490	0.1839E-05	900	0.3013E-05	1310	0.2794E-05
500	0.1897E-05	910	0.3805E-05	1320	0.2452E-05
510	0.1973E-05	920	0.3955E-05	1330	0.2709E-05
520	0.2019E-05	930	0.2794E-05	1340	0.2816E-05
530	0.2084E-05	940	0.3249E-05	1350	0.1931E-05
540	0.2179E-05	950	0.1443E-05	1360	0.1990E-05
550	0.2305E-05	960	0.2952E-05	1370	0.1481E-05
560	0.2384E-05	970	0.3121E-05	1380	0.1490E-05
570	0.2400E-05	980	0.3045E-05	1390	0.1108E-05
580	0.2321E-05	990	0.2890E-05	1400	0.2322E-05
590	0.2228E-05	1000	0.3107E-05		
600	0.2230E-05	1010	0.3116E-05		
610	0.2263E-05	1020	0.3018E-05		
620	0.2274E-05	1030	0.3261E-05		
630	0.2259E-05	1040	0.3108E-05		
640	0.2236E-05	1050	0.3270E-05		
650	0.2220E-05	1060	0.2644E-05		
660	0.2219E-05	1070	0.2872E-05		
670	0.2276E-05	1080	0.2623E-05		
680	0.2373E-05	1090	0.3480E-05		
690	0.2490E-05	1100	0.3269E-05		
700	0.2614E-05	1110	0.3023E-05		
710	0.2663E-05	1120	0.2850E-05		



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LAMP TYPE: FFN PAR 64 1000W.

DATE TESTED: JAN 11, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 450.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 1331.9 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.7557E 07 UW CM**-2SR**-1

I (ACGIH) = 0.6027E-08 W CM**-2

TIME (ACGIH) = 0.4978E+06 SECONDS

REMARKS:

SPOTLIGHT

SAMPLE NUMBER: 0031

TIME OF DAY: 2134

IRRADIANCES:

E (260-320) = 0.6174E-06 W CM**-2

E (320-400) = 0.1286E-03 W CM**-2

E (400-700) = 0.5492E-02 W CM**-2

E (700-1400) = 0.2320E-01 W CM**-2

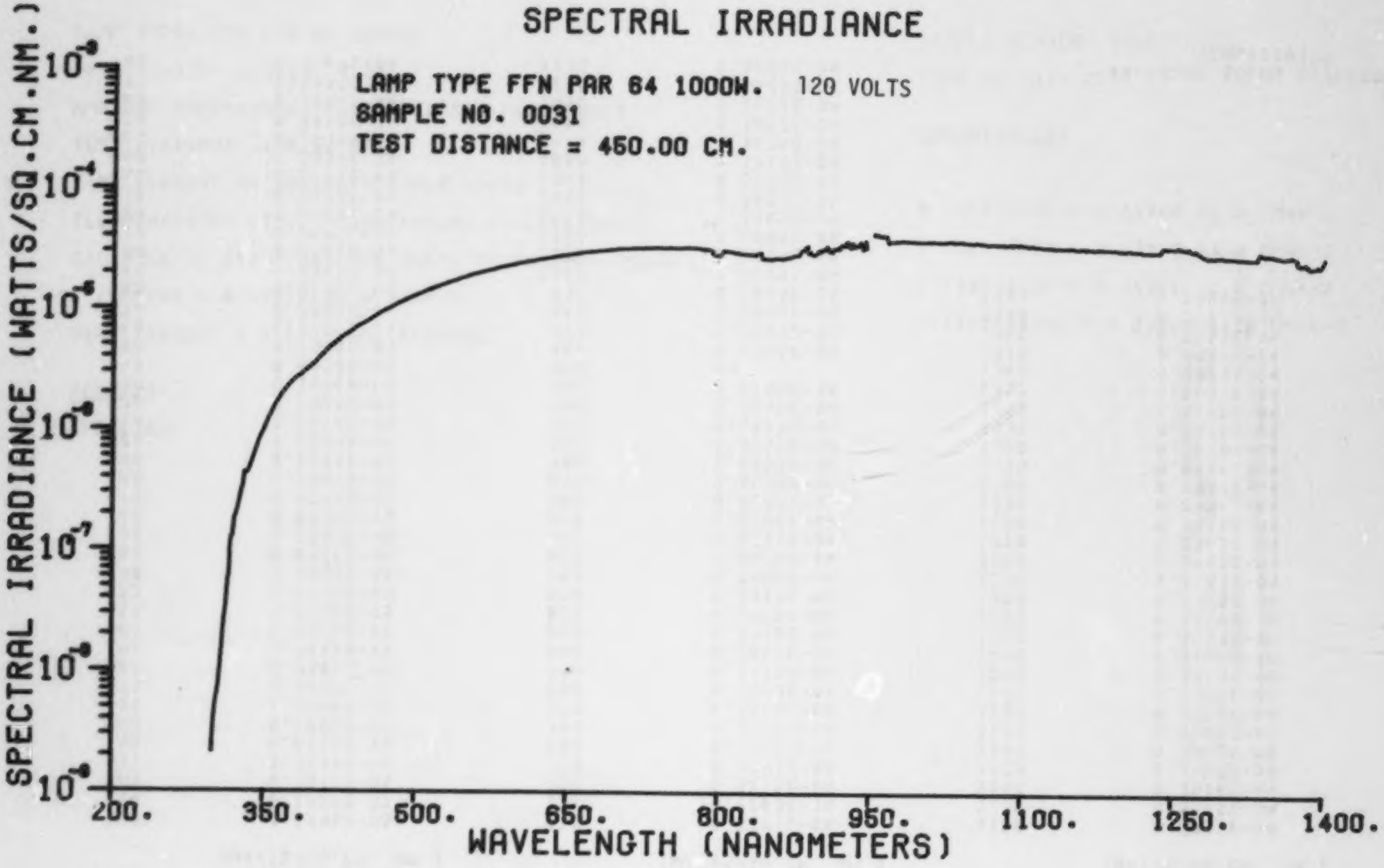
best copy available

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE FFN PAR 64 1000W.

SAMPLE NUMBER 0031
TEST DISTANCE 450.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
300	0.1991E-08	710	0.3223E-04	1120	0.3501E-04
310	0.1950E-07	720	0.3263E-04	1130	0.3470E-04
320	0.1511E-06	730	0.3275E-04	1140	0.3448E-04
330	0.3894E-06	740	0.3291E-04	1150	0.3449E-04
340	0.6110E-06	750	0.3297E-04	1160	0.3441E-04
350	0.1000E-05	760	0.3277E-04	1170	0.3386E-04
360	0.1546E-05	770	0.3323E-04	1180	0.3389E-04
370	0.2085E-05	780	0.3263E-04	1190	0.3378E-04
380	0.2586E-05	790	0.3175E-04	1200	0.3314E-04
390	0.3012E-05	800	0.2855E-04	1210	0.3284E-04
400	0.3534E-05	810	0.3078E-04	1220	0.3219E-04
410	0.4368E-05	820	0.2976E-04	1230	0.3217E-04
420	0.5148E-05	830	0.2915E-04	1240	0.3528E-04
430	0.6052E-05	840	0.3008E-04	1250	0.3489E-04
440	0.6916E-05	850	0.2676E-04	1260	0.3465E-04
450	0.7707E-05	860	0.2715E-04	1270	0.3363E-04
460	0.8734E-05	870	0.2802E-04	1280	0.3015E-04
470	0.9790E-05	880	0.3133E-04	1290	0.2954E-04
480	0.1087E-04	890	0.3038E-04	1300	0.2947E-04
490	0.1191E-04	900	0.3158E-04	1310	0.2914E-04
500	0.1299E-04	910	0.3245E-04	1320	0.2879E-04
510	0.1414E-04	920	0.3573E-04	1330	0.2874E-04
520	0.1528E-04	930	0.3645E-04	1340	0.3105E-04
530	0.1636E-04	940	0.3595E-04	1350	0.3055E-04
540	0.1750E-04	950	**	1360	0.2929E-04
550	0.1870E-04	960	0.4260E-04	1370	0.2950E-04
560	0.1982E-04	970	0.3809E-04	1380	0.2663E-04
570	0.2090E-04	980	0.3886E-04	1390	0.2477E-04
580	0.2198E-04	990	0.3843E-04	1400	0.2980E-04
590	0.2301E-04	1000	0.3795E-04		
600	0.2401E-04	1010	0.3839E-04		
610	0.2495E-04	1020	0.3808E-04		
620	0.2590E-04	1030	0.3865E-04		
630	0.2678E-04	1040	0.3825E-04		
640	0.2771E-04	1050	0.3740E-04		
650	0.2859E-04	1060	0.3719E-04		
660	0.2934E-04	1070	0.3674E-04		
670	0.3013E-04	1080	0.3652E-04		
680	0.3074E-04	1090	0.3611E-04		
690	0.3137E-04	1100	0.3625E-04		
700	0.3209E-04	1110	0.3591E-04		

**-VALUE BELOW DETECTOR SENSITIVITY


SPECTRAL IRRADIANCE
LAMP TYPE FFN PAR 64 1000W. 120 VOLTS
SAMPLE NO. 0031
TEST DISTANCE = 450.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
WAVELENGTH (NANOMETERS)
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.

LAMP TYPE: FFN PAR 64 1000W.

DATE TESTED: JAN 11, 1978

AMBIENT TEMPERATURE: 76.0 DEGREES FAHRENHEIT

TEST DISTANCE: 450.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 1452.6 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.8102E 07 UW CM**-2SR**-1

I (ACGIH) = 0.9767E-08 W CM**-2

TIME (ACGIH) = 0.3072E+06 SECONDS

__REMARKS__:

SPOTLIGHT

SAMPLE NUMBER: 0032

TIME OF DAY: 1917

__IRRADIANCES__:

E (260-320) = 0.7644E-06 W CM**-2

E (320-400) = 0.1445E-03 W CM**-2

E (400-700) = 0.5984E-02 W CM**-2

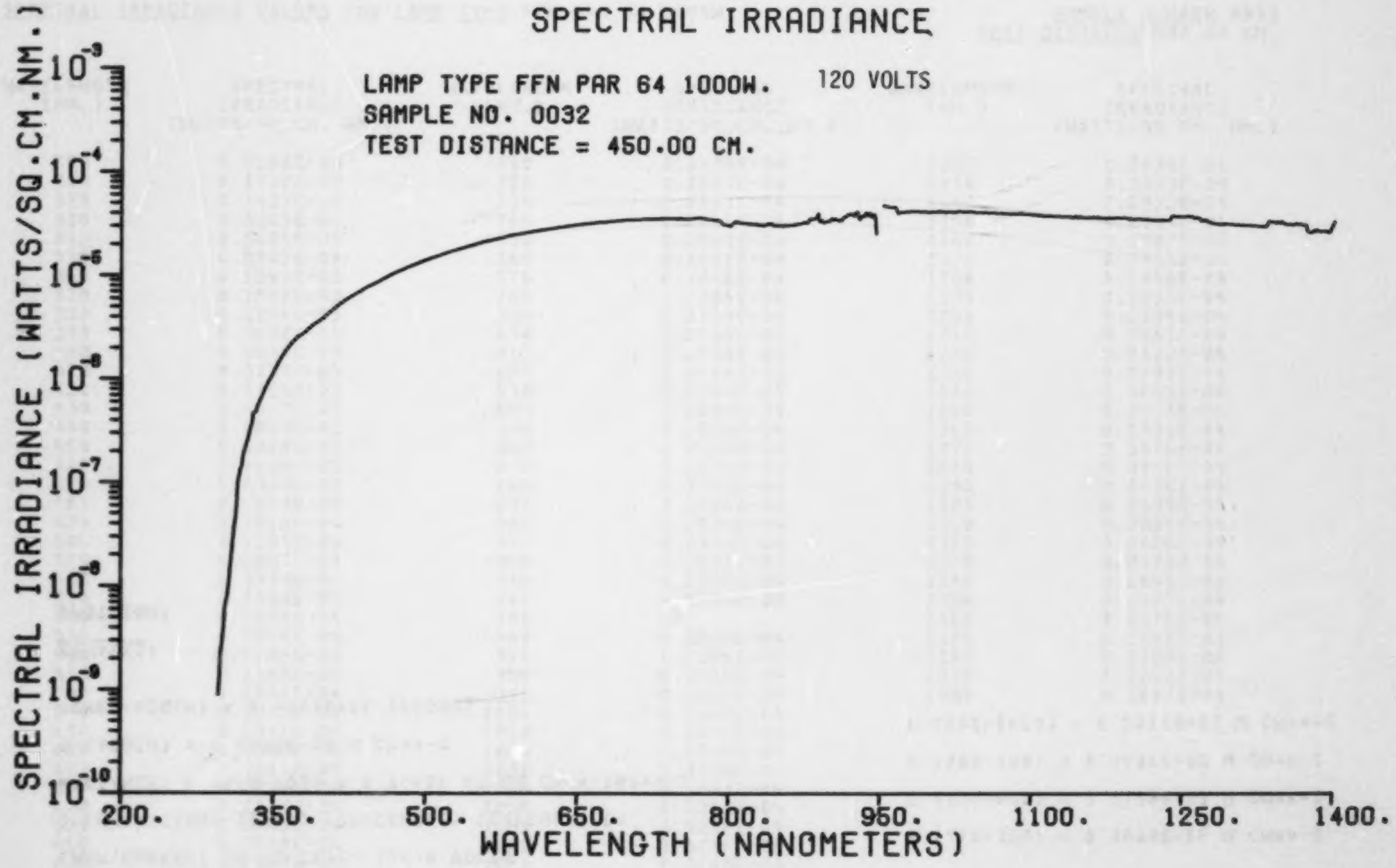
E (700-1400) = 0.2541E-01 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE FFN PAR 64 1000W.

SAMPLE NUMBER 0032
TEST DISTANCE 450.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
300	0.2909E-08	710	0.3502E-04	1120	0.3864E-04
310	0.2478E-07	720	0.3551E-04	1130	0.3806E-04
320	0.1666E-06	730	0.3565E-04	1140	0.3773E-04
330	0.4458E-06	740	0.3568E-04	1150	0.3763E-04
340	0.7308E-06	750	0.3576E-04	1160	0.3785E-04
350	0.1158E-05	760	0.3544E-04	1170	0.3692E-04
360	0.1756E-05	770	0.3626E-04	1180	0.3709E-04
370	0.2343E-05	780	0.3527E-04	1190	0.3743E-04
380	0.2803E-05	790	0.3433E-04	1200	0.3635E-04
390	0.3394E-05	800	0.3055E-04	1210	0.3620E-04
400	0.3960E-05	810	0.3308E-04	1220	0.3564E-04
410	0.4826E-05	820	0.3179E-04	1230	0.3565E-04
420	0.5715E-05	830	0.3111E-04	1240	0.3902E-04
430	0.6604E-05	840	0.3175E-04	1250	0.3847E-04
440	0.7576E-05	850	0.3062E-04	1260	0.3763E-04
450	0.8423E-05	860	0.3095E-04	1270	0.3561E-04
460	0.9526E-05	870	0.3159E-04	1280	0.3307E-04
470	0.1068E-04	880	0.3577E-04	1290	0.3255E-04
480	0.1182E-04	890	0.3369E-04	1300	0.3230E-04
490	0.1294E-04	900	0.3463E-04	1310	0.3176E-04
500	0.1419E-04	910	0.3464E-04	1320	0.3153E-04
510	0.1536E-04	920	0.3998E-04	1330	0.3125E-04
520	0.1665E-04	930	0.3724E-04	1340	0.3413E-04
530	0.1784E-04	940	0.3909E-04	1350	0.3330E-04
540	0.1907E-04	950	**	1360	0.3229E-04
550	0.2040E-04	960	0.4631E-04	1370	0.3213E-04
560	0.2161E-04	970	0.4156E-04	1380	0.2839E-04
570	0.2268E-04	980	0.4250E-04	1390	0.2794E-04
580	0.2400E-04	990	0.4210E-04	1400	0.3403E-04
590	0.2519E-04	1000	0.4210E-04		
600	0.2621E-04	1010	0.4228E-04		
610	0.2720E-04	1020	0.4214E-04		
620	0.2822E-04	1030	0.4265E-04		
630	0.2919E-04	1040	0.4242E-04		
640	0.3015E-04	1050	0.4175E-04		
650	0.3111E-04	1060	0.4152E-04		
660	0.3190E-04	1070	0.4086E-04		
670	0.3272E-04	1080	0.4043E-04		
680	0.3340E-04	1090	0.4013E-04		
690	0.3408E-04	1100	0.3988E-04		
700	0.3481E-04	1110	0.3889E-04		

**-VALUE BELOW DETECTOR SENSITIVITY


SPECTRAL IRRADIANCE
LAMP TYPE FFN PAR 64 1000W.
120 VOLTS
SAMPLE NO. 0032
TEST DISTANCE = 450.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: FFN PAR 64 1000W.

DATE TESTED: JAN 11, 1978

AMBIENT TEMPERATURE: 76.0 DEGREES FAHRENHEIT

TEST DISTANCE: 450.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 1140.5 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.7468E 07 UW CM**-2SR**-1

I (ACGIH) = 0.6170E-08 W CM**-2

TIME (ACGIH) = 7.4863E+06 SECONDS

REMARKS:

SPOTLIGHT

SAMPLE NUMBER: 0033

TIME OF DAY: 1703

IRRADIANCES:

E (260-320) = 0.5098E-06 W CM**-2

E (320-400) = 0.1129E-03 W CM**-2

E (400-700) = 0.4697E-02 W CM**-2

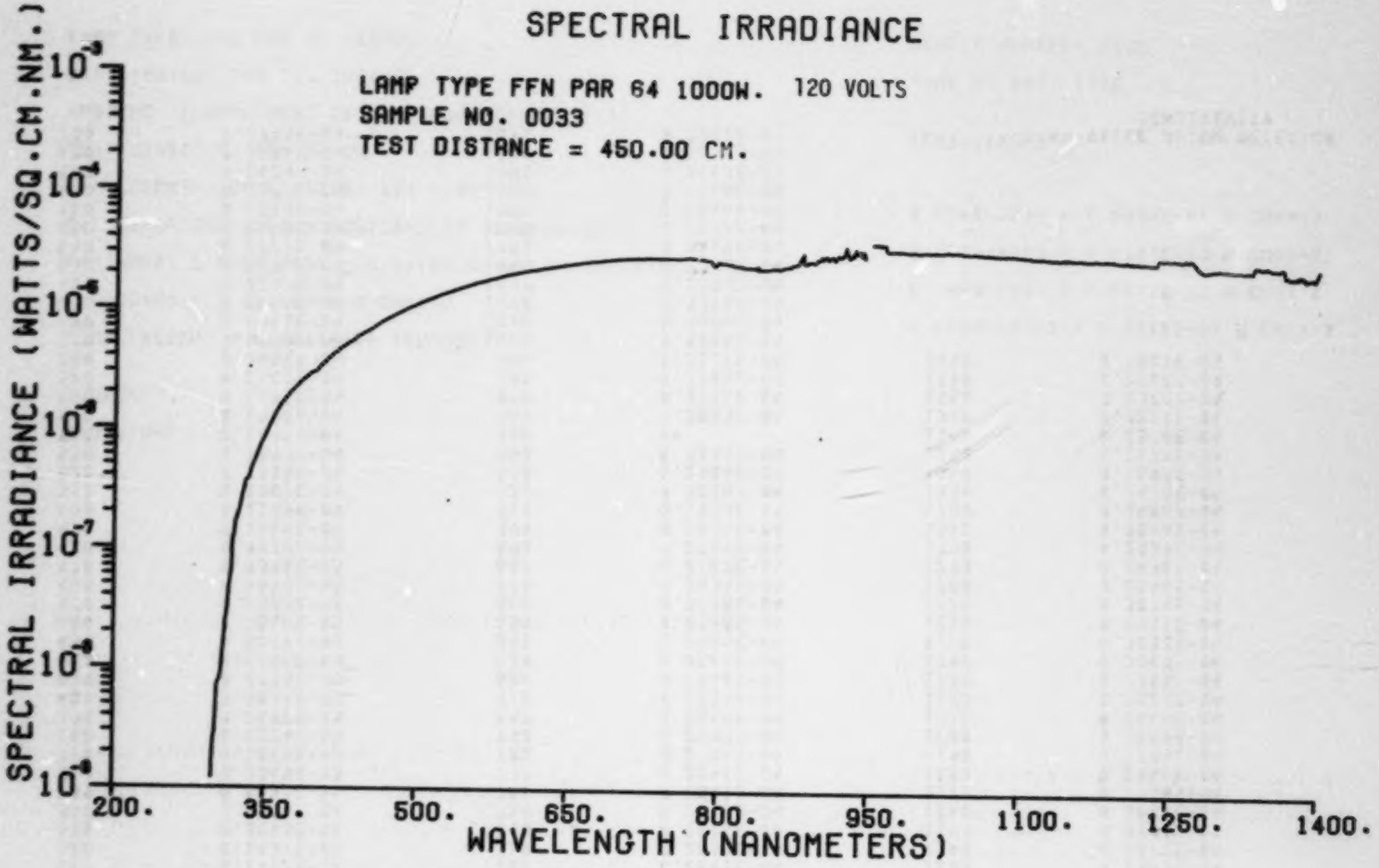
E (700-1400) = 0.2010E-01 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE FFN PAR 64 1000W.

SAMPLE NUMBER 0033
TEST DISTANCE 450.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
300	0.2188E-08	710	0.2759E-04	1120	0.3030E-04
310	0.1712E-07	720	0.2801E-04	1130	0.2983E-04
320	0.1437E-06	730	0.2811E-04	1140	0.2972E-04
330	0.3503E-06	740	0.2816E-04	1150	0.2999E-04
340	0.5606E-06	750	0.2813E-04	1160	0.3007E-04
350	0.8845E-06	760	0.2801E-04	1170	0.2956E-04
360	0.1349E-05	770	0.2846E-04	1180	0.2946E-04
370	0.1805E-05	780	0.2784E-04	1190	0.2955E-04
380	0.2224E-05	790	0.2709E-04	1200	0.2884E-04
390	0.2692E-05	800	0.2615E-04	1210	0.2863E-04
400	0.3034E-05	810	0.2534E-04	1220	0.2822E-04
410	0.3733E-05	820	0.2448E-04	1230	0.2795E-04
420	0.4354E-05	830	0.2384E-04	1240	0.3069E-04
430	0.5077E-05	840	0.2305E-04	1250	0.3033E-04
440	0.5860E-05	850	0.2328E-04	1260	0.2991E-04
450	0.6528E-05	860	0.2328E-04	1270	0.3076E-04
460	0.7416E-05	870	0.2434E-04	1280	0.2546E-04
470	0.8330E-05	880	0.2782E-04	1290	0.2496E-04
480	0.9279E-05	890	0.2704E-04	1300	0.2539E-04
490	0.1016E-04	900	0.2834E-04	1310	0.2500E-04
500	0.1109E-04	910	0.2930E-04	1320	0.2488E-04
510	0.1207E-04	920	0.3030E-04	1330	0.2478E-04
520	0.1305E-04	930	0.2984E-04	1340	0.2695E-04
530	0.1399E-04	940	0.3334E-04	1350	0.2677E-04
540	0.1495E-04	950	**	1360	0.2578E-04
550	0.1598E-04	960	0.3805E-04	1370	0.2217E-04
560	0.1694E-04	970	0.3386E-04	1380	0.2320E-04
570	0.1788E-04	980	0.3385E-04	1390	0.2202E-04
580	0.1884E-04	990	0.3317E-04	1400	0.2607E-04
590	0.1980E-04	1000	0.3304E-04		
600	0.2061E-04	1010	0.3326E-04		
610	0.2140E-04	1020	0.3310E-04		
620	0.2217E-04	1030	0.3354E-04		
630	0.2291E-04	1040	0.3343E-04		
640	0.2370E-04	1050	0.3265E-04		
650	0.2445E-04	1060	0.3238E-04		
660	0.2510E-04	1070	0.3216E-04		
670	0.2577E-04	1080	0.3168E-04		
680	0.2629E-04	1090	0.3163E-04		
690	0.2686E-04	1100	0.3137E-04		
700	0.2745E-04	1110	0.3082E-04		

**-VALUE BELOW DETECTOR SENSITIVITY


SPECTRAL IRRADIANCE
LAMP TYPE FFN PAR 64 1000W. 120 VOLTS
SAMPLE NO. 0033
TEST DISTANCE = 450.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: EFX 500W.

DATE TESTED: DEC 16, 1977

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 387.8 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.7037E 07 UW CM**-2SR**-1

I (ACGIH) = 0.1182E-05 W CM**-2

TIME (ACGIH) = 0.2537E+04 SECONDS

<u>REMARKS</u>:

VOLTAGE IN VDC

QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

SAMPLE NUMBER: 0058

TIME OF DAY: 1619

<u>IRRADIANCES</u>:

E (200-260) = 0.1354E-06 W CM**-2

E (260-320) = 0.3608E-05 W CM**-2

E (320-400) = 0.4067E-04 W CM**-2

E (400-700) = 0.1646E-02 W CM**-2

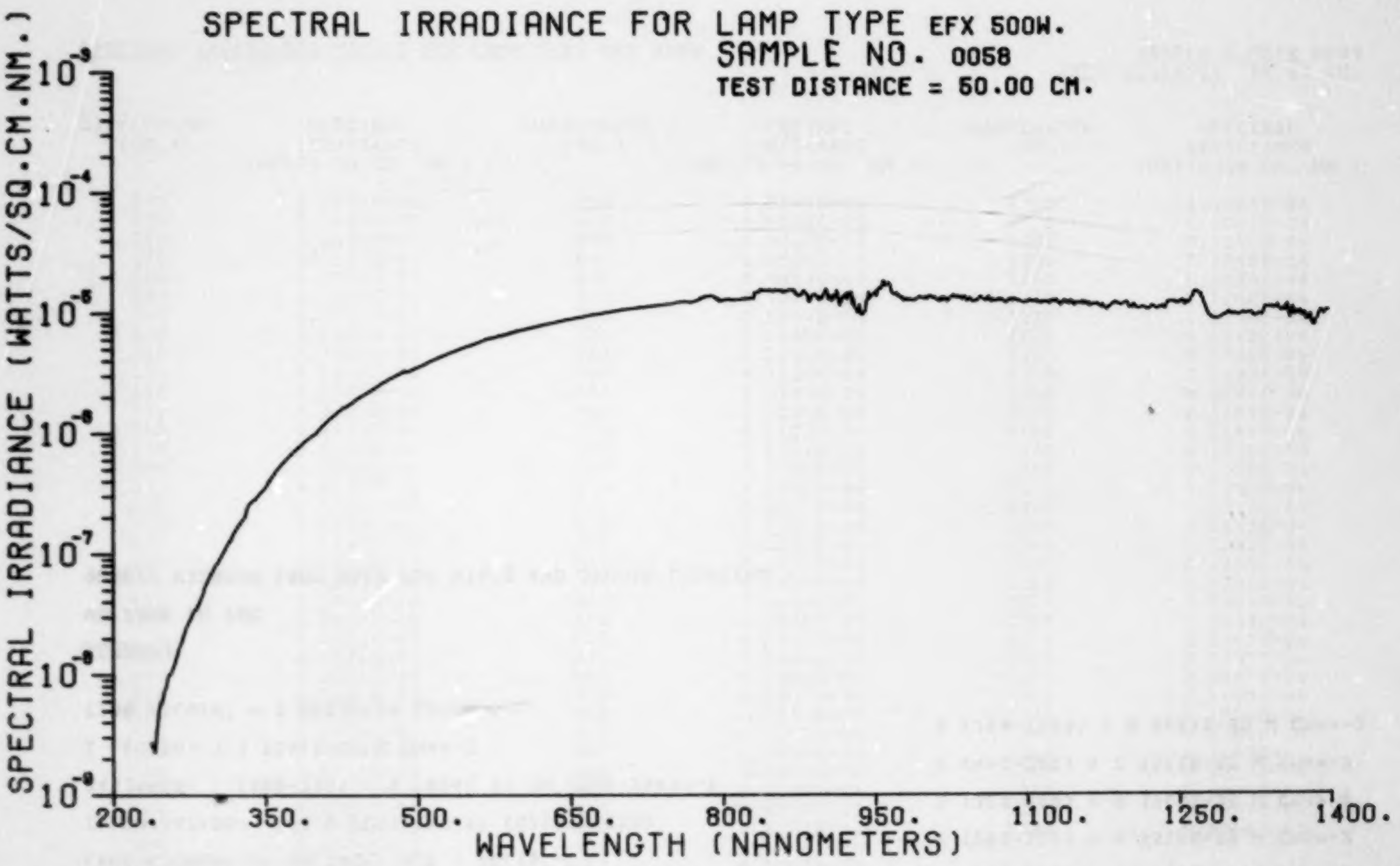
E (700-1400) = 0.8541E-02 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE EFX 500W.

SAMPLE NUMBER 0058
TEST DISTANCE 50.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
240	0.2428E-08	650	0.8913E-05	1060	0.1263E-04
250	0.7252E-08	660	0.9228E-05	1070	0.1257E-04
260	0.1208E-07	670	0.9579E-05	1080	0.1218E-04
270	0.2192E-07	680	0.9896E-05	1090	0.1264E-04
280	0.3412E-07	690	0.1023E-04	1100	0.1220E-04
290	0.5278E-07	700	0.1061E-04	1110	0.1226E-04
300	0.7846E-07	710	0.1086E-04	1120	0.1223E-04
310	0.1087E-06	720	0.1116E-04	1130	0.1229E-04
320	0.1533E-06	730	0.1141E-04	1140	0.1214E-04
330	0.2064E-06	740	0.1163E-04	1150	0.1209E-04
340	0.2868E-06	750	0.1194E-04	1160	0.1187E-04
350	0.3568E-06	760	0.1234E-04	1170	0.1162E-04
360	0.4305E-06	770	0.1228E-04	1180	0.1086E-04
370	0.6039E-06	780	0.1333E-04	1190	0.1184E-04
380	0.7337E-06	790	0.1386E-04	1200	0.1146E-04
390	0.8701E-06	800	0.1266E-04	1210	0.1086E-04
400	0.1005E-05	810	0.1280E-04	1220	0.1068E-04
410	0.1236E-05	820	0.1299E-04	1230	0.1098E-04
420	0.1461E-05	830	0.1314E-04	1240	0.1229E-04
430	0.1687E-05	840	0.1528E-04	1250	0.1204E-04
440	0.1936E-05	850	0.1505E-04	1260	0.1215E-04
450	0.2158E-05	860	0.1485E-04	1270	0.1426E-04
460	0.2447E-05	870	0.1536E-04	1280	0.9431E-05
470	0.2763E-05	880	0.1516E-04	1290	0.8969E-05
480	0.3068E-05	890	0.1410E-04	1300	0.9953E-05
490	0.3233E-05	900	0.1430E-04	1310	0.9599E-05
500	0.3554E-05	910	0.1402E-04	1320	0.9812E-05
510	0.3899E-05	920	0.1339E-04	1330	0.9812E-05
520	0.4249E-05	930	0.1164E-04	1340	0.1108E-04
530	0.4608E-05	940	0.1005E-04	1350	0.1055E-04
540	0.4983E-05	950	**	1360	0.9207E-05
550	0.5311E-05	960	0.1710E-04	1370	0.9969E-05
560	0.5703E-05	970	0.1402E-04	1380	0.9355E-05
570	0.6142E-05	980	0.1290E-04	1390	0.1037E-04
580	0.6451E-05	990	0.1276E-04		
590	0.6792E-05	1000	0.1320E-04		
600	0.7147E-05	1010	0.1315E-04		
610	0.7508E-05	1020	0.1304E-04		
620	0.7868E-05	1030	0.1341E-04		
630	0.8209E-05	1040	0.1305E-04		
640	0.8577E-05	1050	0.1250E-04		

**-VALUE BELOW DETECTOR SENSITIVITY


SPECTRAL IRRADIANCE FOR LAMP TYPE EFX 500W.
SAMPLE NO. 0058
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
WAVELENGTH (NANOMETERS)
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.

LAMP TYPE: EFX 500W.

DATE TESTED: DEC 16, 1977

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 365.0 FOOTCANDLES (CALCULATED)

RADIANCE: L* (400-700) = 0.7026E 07 UW CM**-2SR**-1

I (ACGIH) = 0.1041E-05 W CM**-2

TIME (ACGIH) = 0.2883E+04 SECONDS

REMARKS:

VOLTAGE IN VDC

QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

SAMPLE NUMBER: 0059

TIME OF DAY: 1920

IRRADIANCES:

E (200-260) = 0.1199E-06 W CM**-2

E (260-320) = 0.3318E-05 W CM**-2

E (320-400) = 0.3764E-04 W CM**-2

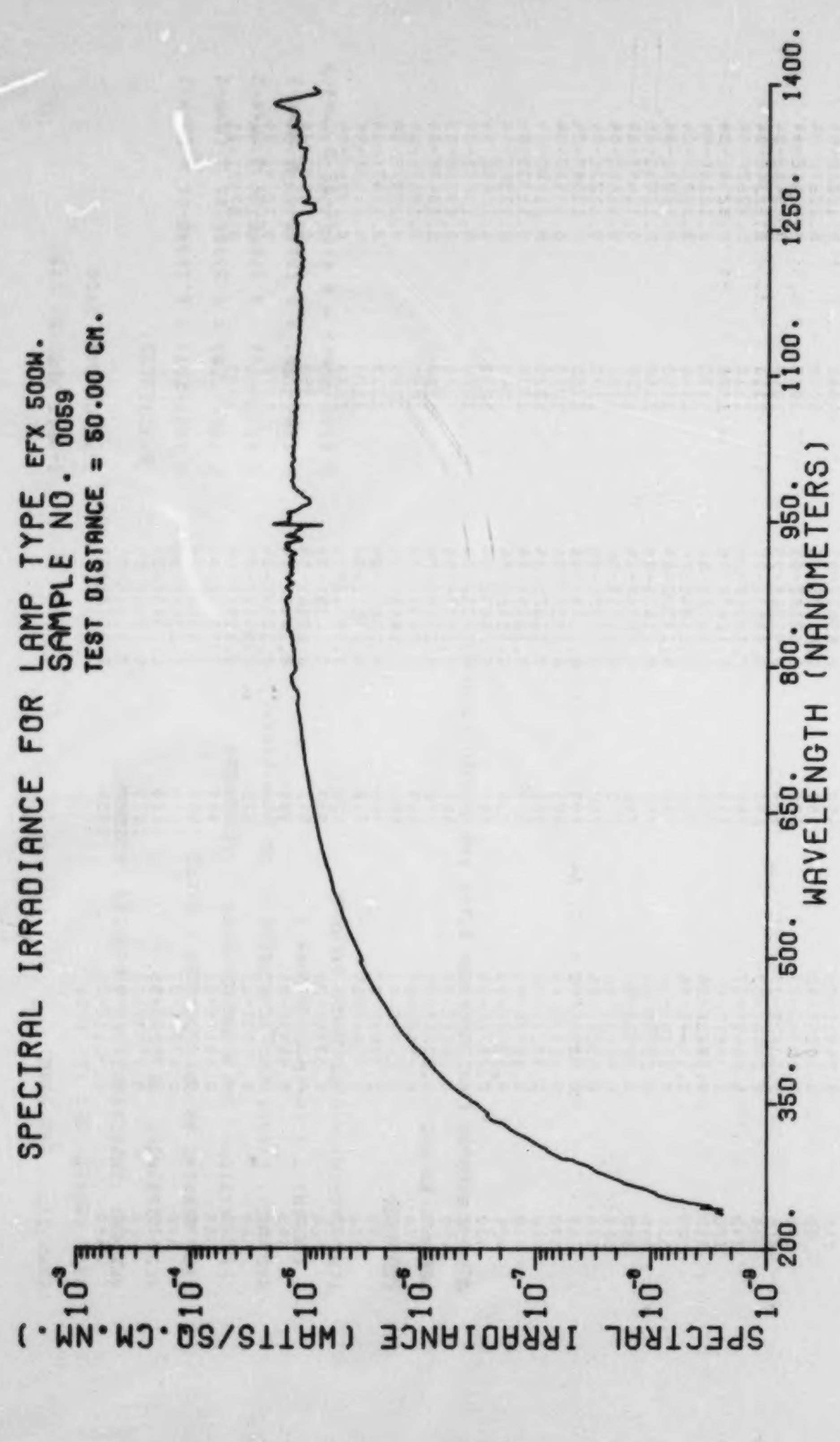
E (400-700) = 0.1561E-02 W CM**-2

E (700-1400) = 0.8661E-02 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE EFX 500W.

SAMPLE NUMBER 0059
TEST DISTANCE 50.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
240	0.2491E-08	650	0.8541E-05	1060	0.1286E-04
250	0.5625E-08	660	0.8348E-05	1070	0.1267E-04
260	0.1034E-07	670	0.9210E-05	1080	0.1244E-04
270	0.1802E-07	680	0.9526E-05	1090	0.1248E-04
280	0.2968E-07	690	0.9853E-05	1100	0.1234E-04
290	0.4449E-07	700	0.1024E-04	1110	0.1262E-04
300	0.7451E-07	710	0.1047E-04	1120	0.1234E-04
310	0.1028E-06	720	0.1078E-04	1130	0.1210E-04
320	0.1461E-06	730	0.1104E-04	1140	0.1201E-04
330	0.1948E-06	740	0.1130E-04	1150	0.1197E-04
340	0.2575E-06	750	0.1163E-04	1160	0.1194E-04
350	0.3258E-06	760	0.1204E-04	1170	0.1149E-04
360	0.4403E-06	770	0.1181E-04	1180	0.1160E-04
370	0.5580E-06	780	0.1307E-04	1190	0.1222E-04
380	0.6802E-06	790	0.1374E-04	1200	0.1158E-04
390	0.8093E-06	800	0.1252E-04	1210	0.1150E-04
400	0.9321E-06	810	0.1282E-04	1220	0.1110E-04
410	0.1142E-05	820	0.1304E-04	1230	0.1133E-04
420	0.1347E-05	830	0.1355E-04	1240	0.1298E-04
430	0.1570E-05	840	0.1443E-04	1250	0.1269E-04
440	0.1803E-05	850	0.1439E-04	1260	0.1300E-04
450	0.2010E-05	860	0.1453E-04	1270	0.8909E-05
460	0.2288E-05	870	0.1518E-04	1280	0.1049E-04
470	0.2580E-05	880	0.1497E-04	1290	0.1047E-04
480	0.2876E-05	890	0.1464E-04	1300	0.1097E-04
490	0.3166E-05	900	0.1362E-04	1310	0.1147E-04
500	0.3266E-05	910	0.1387E-04	1320	0.1105E-04
510	0.3606E-05	920	0.1451E-04	1330	0.1076E-04
520	0.3936E-05	930	0.1135E-04	1340	0.1181E-04
530	0.4299E-05	940	0.1236E-04	1350	0.1199E-04
540	0.4643E-05	950	0.1449E-04	1360	0.1283E-04
550	0.4951E-05	960	0.1309E-04	1370	0.1269E-04
560	0.5323E-05	970	0.9517E-05	1380	0.1997E-04
570	0.5784E-05	980	0.1191E-04	1390	0.8798E-05
580	0.6019E-05	990	0.1364E-04		
590	0.6351E-05	1000	0.1342E-04		
600	0.6777E-05	1010	0.1360E-04		
610	0.7154E-05	1020	0.1343E-04		
620	0.7543E-05	1030	0.1306E-04		
630	0.7867E-05	1040	0.1301E-04		
640	0.8213E-05	1050	0.1278E-04		


SPECTRAL IRRADIANCE FOR LAMP TYPE EFX 500W.
SAMPLE NO. 0059
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: EFX 500W.

DATE TESTED: DEC 16, 1977

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 389.4 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.7449E 07 UW CM**-2SR**-1

I (ACGIH) = 0.1271E-05 W CM**-2

TIME (ACGIH) = 0.2361E+04 SECONDS

<u>REMARKS</u>:

VOLTAGE IN VDC

QUARTZ HALOGEN LAMP USED FOR STAGE AND STUDIO LIGHTING

SAMPLE NUMBER: 0060

TIME OF DAY: 2124

<u>IRRADIANCES</u>:

E (200-260) = 0.1493E-06 W CM**-2

E (260-320) = 0.3765E-05 W CM**-2

E (320-400) = 0.4159E-04 W CM**-2

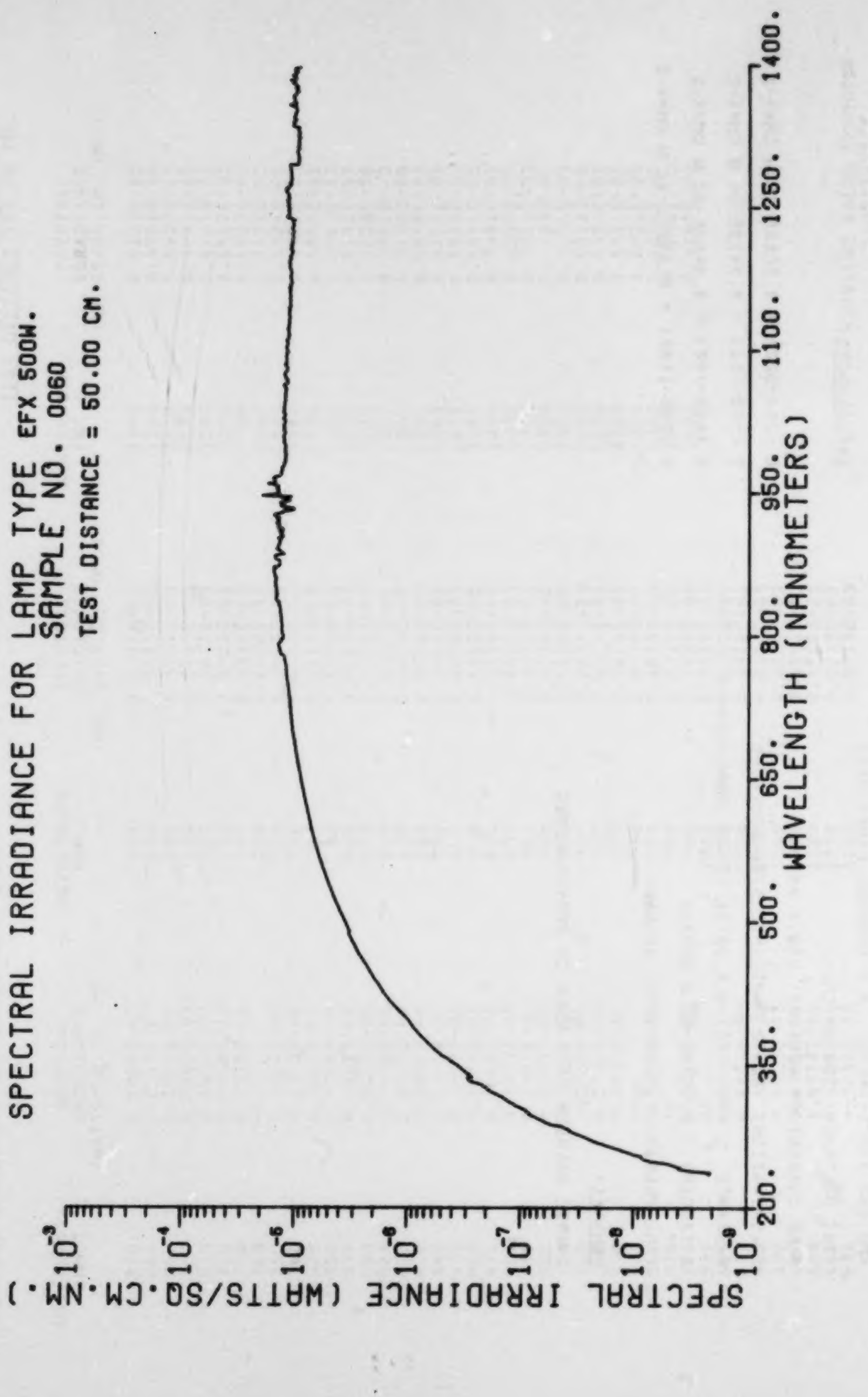
E (400-700) = 0.1646E-02 W CM**-2

E (700-1400) = 0.8457E-02 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE EFX 500W.

SAMPLE NUMBER 0060
TEST DISTANCE 50.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
240	0.3592E-08	650	0.8851E-05	1060	0.1256E-04
250	0.7430E-08	660	0.9171E-05	1070	0.1231E-04
260	0.1241E-07	670	0.9496E-05	1080	0.1197E-04
270	0.2270E-07	680	0.9802E-05	1090	0.1222E-04
280	0.3549E-07	690	0.1009E-04	1100	0.1207E-04
290	0.5974E-07	700	0.1054E-04	1110	0.1204E-04
300	0.8543E-07	710	0.1072E-04	1120	0.1169E-04
310	0.1188E-06	720	0.1099E-04	1130	0.1165E-04
320	0.1664E-06	730	0.1117E-04	1140	0.1159E-04
330	0.2269E-06	740	0.1136E-04	1150	0.1134E-04
340	0.2840E-06	750	0.1165E-04	1160	0.1148E-04
350	0.3610E-06	760	0.1193E-04	1170	0.1108E-04
360	0.4877E-06	770	0.1215E-04	1180	0.1118E-04
370	0.6144E-06	780	0.1334E-04	1190	0.1145E-04
380	0.7460E-06	790	0.1409E-04	1200	0.1106E-04
390	0.8877E-06	800	0.1286E-04	1210	0.1111E-04
400	0.1022E-05	810	0.1315E-04	1220	0.1084E-04
410	0.1247E-05	820	0.1341E-04	1230	0.1063E-04
420	0.1476E-05	830	0.1377E-04	1240	0.1207E-04
430	0.1704E-05	840	0.1473E-04	1250	0.1195E-04
440	0.1955E-05	850	0.1482E-04	1260	0.1177E-04
450	0.2175E-05	860	0.1480E-04	1270	0.1183E-04
460	0.2464E-05	870	0.1543E-04	1280	0.1123E-04
470	0.2778E-05	880	0.1492E-04	1290	0.1137E-04
480	0.3079E-05	890	0.1439E-04	1300	0.9559E-05
490	0.3245E-05	900	0.1361E-04	1310	0.9659E-05
500	0.3559E-05	910	0.1338E-04	1320	0.9640E-05
510	0.3917E-05	920	0.1403E-04	1330	0.9704E-05
520	0.4278E-05	930	0.1243E-04	1340	0.1042E-04
530	0.4618E-05	940	0.1246E-04	1350	0.1012E-04
540	0.5001E-05	950	0.1436E-04	1360	0.1037E-04
550	0.5348E-05	960	0.1547E-04	1370	0.1008E-04
560	0.5741E-05	970	0.1352E-04	1380	0.1081E-04
570	0.6101E-05	980	0.1272E-04	1390	0.1027E-04
580	0.6460E-05	990	0.1229E-04		
590	0.6849E-05	1000	0.1254E-04		
600	0.7187E-05	1010	0.1278E-04		
610	0.7519E-05	1020	0.1279E-04		
620	0.7850E-05	1030	0.1262E-04		
630	0.8190E-05	1040	0.1272E-04		
640	0.8540E-05	1050	0.1242E-04		


SPECTRAL IRRADIANCE FOR LAMP TYPE EFX 500W.
SAMPLE NO. 0060
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-3
10^-4
10^-5
10^-6
10^-7
10^-8
10^-9
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: Q1000T3/CL (1000W)

DATE TESTED: JUL 05, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 240.0 VOLTS

ILLUMINATION: 224.2 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.5876E 07 UW CM**-2SR**-1

I (ACGIH) = 0.6993E-06 W CM**-2

TIME (ACGIH) = 0.4290E+04 SECONDS

REMARKS:

QUARTZ HALOGEN LAMP USED IN PHOTOCOPIERS

SAMPLE NUMBER: 0109

TIME OF DAY: 1104

IRRADIANCES:

E (260-320) = 0.2082E-05 W CM**-2

E (320-400) = 0.2413E-04 W CM**-2

E (400-700) = 0.9442E-03 W CM**-2

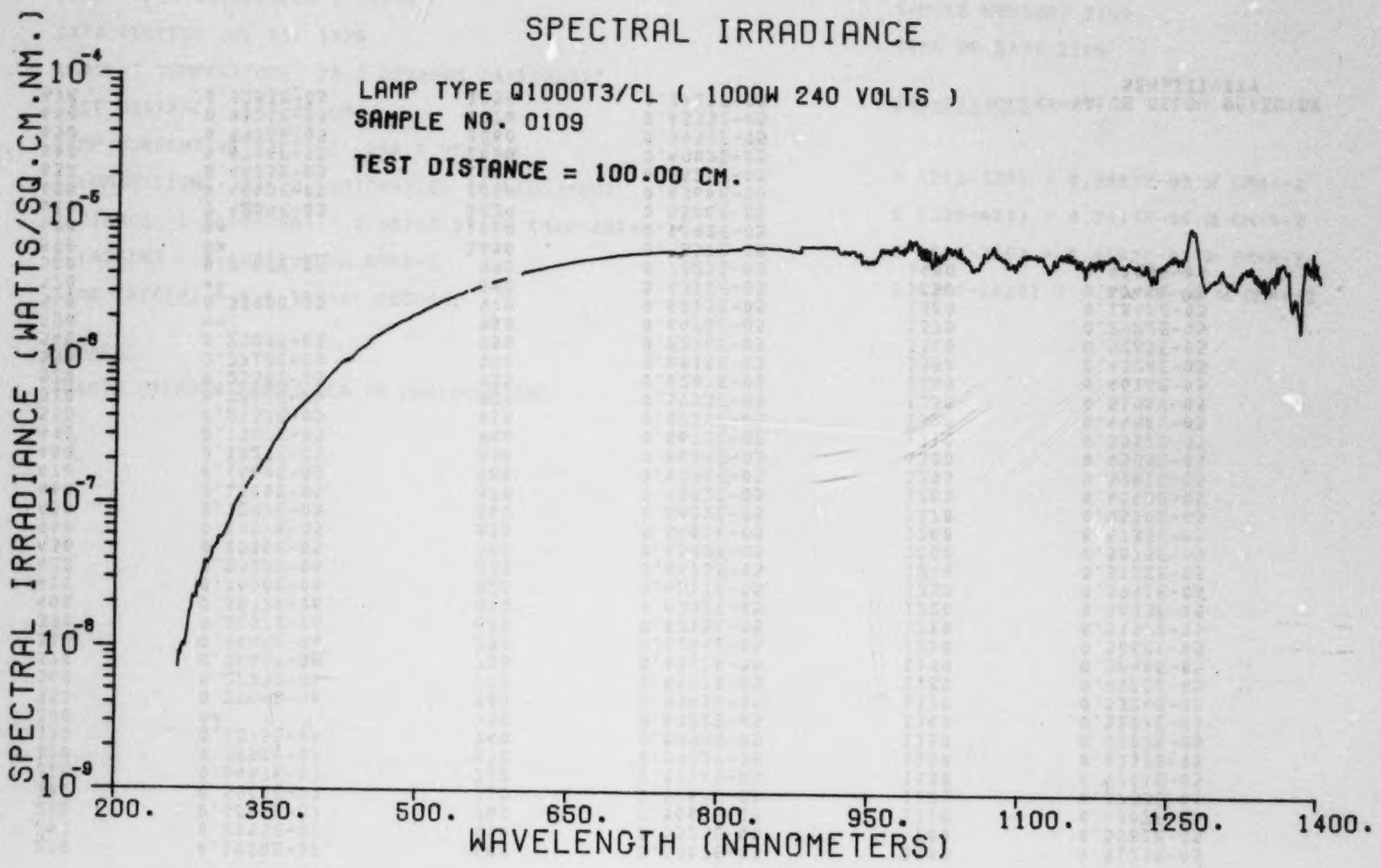
E (700-1400) = 0.3960E-02 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE Q1000T3/CL (1000W)

SAMPLE NUMBER 0109
TEST DISTANCE 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
270	0.1020E-07	680	0.5387E-05	1090	0.5129E-05
280	0.2193E-07	690	0.5523E-05	1100	0.5581E-05
290	0.3861E-07	700	0.5664E-05	1110	0.6002E-05
300	0.5002E-07	710	0.5760E-05	1120	0.5733E-05
310	0.6447E-07	720	0.5816E-05	1130	0.4741E-05
320	0.9958E-07	730	0.5923E-05	1140	0.6117E-05
330	0.1275E-06	740	0.5995E-05	1150	0.6003E-05
340	**	750	0.6022E-05	1160	0.5157E-05
350	0.2064E-06	760	0.5943E-05	1170	0.5324E-05
360	0.2773E-06	770	0.6107E-05	1180	0.4982E-05
370	0.3665E-06	780	0.6162E-05	1190	0.5848E-05
380	0.4448E-06	790	0.6144E-05	1200	0.5060E-05
390	0.5207E-06	800	0.6215E-05	1210	0.5192E-05
400	0.6077E-06	810	0.6302E-05	1220	0.4833E-05
410	0.7450E-06	820	0.6317E-05	1230	0.3991E-05
420	0.8915E-06	830	0.6673E-05	1240	0.5132E-05
430	0.1006E-05	840	0.6502E-05	1250	0.5875E-05
440	0.1157E-05	850	0.6461E-05	1260	0.5733E-05
450	0.1297E-05	860	0.6412E-05	1270	0.9570E-05
460	0.1500E-05	870	0.6252E-05	1280	0.4540E-05
470	0.1660E-05	880	0.6196E-05	1290	0.3981E-05
480	0.1829E-05	890	0.6634E-05	1300	0.4558E-05
490	0.1967E-05	900	0.6672E-05	1310	0.3911E-05
500	0.2133E-05	910	0.6739E-05	1320	0.4486E-05
510	0.2343E-05	920	0.6053E-05	1330	0.5198E-05
520	0.2530E-05	930	0.6207E-05	1340	0.4016E-05
530	0.2718E-05	940	0.6014E-05	1350	0.4320E-05
540	0.2909E-05	950	0.5276E-05	1360	0.5288E-05
550	**	960	0.6476E-05	1370	0.2922E-05
560	0.3308E-05	970	0.6213E-05	1380	0.1842E-05
570	**	980	0.6310E-05	1390	0.4746E-05
580	0.3667E-05	990	0.7027E-05	1400	0.4109E-05
590	**	1000	0.5837E-05		
600	**	1010	0.5142E-05		
610	0.4284E-05	1020	0.5588E-05		
620	0.4440E-05	1030	0.6364E-05		
630	0.4625E-05	1040	0.5824E-05		
640	0.4796E-05	1050	0.4902E-05		
650	0.4976E-05	1060	0.5434E-05		
660	0.5126E-05	1070	0.6339E-05		
670	0.5253E-05	1080	0.5713E-05		

**-VALUE BELOW DETECTOR SENSITIVITY


SPECTRAL IRRADIANCE
LAMP TYPE Q1000T3/CL (1000W 240 VOLTS)
SAMPLE NO. 0109
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: Q1000T3/CL (1000W)

DATE TESTED: JUL 05, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 240.0 VOLTS

ILLUMINATION: 230.7 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.5907E 07 UW CM**-2SR**-1

I (ACGIH) = 0.7753E-06 W CM**-2

TIME (ACGIH) = 0.3870E+04 SECONDS

REMARKS:

QUARTZ HALOGEN LAMP USED IN PHOTOCOPIERS

SAMPLE NUMBER: 0110

TIME OF DAY: 1311

IRRADIANCES:

E (200-260) = 0.1830E-07 W CM**-2

E (260-320) = 0.2406E-05 W CM**-2

E (320-400) = 0.2536E-04 W CM**-2

E (400-700) = 0.9663E-03 W CM**-2

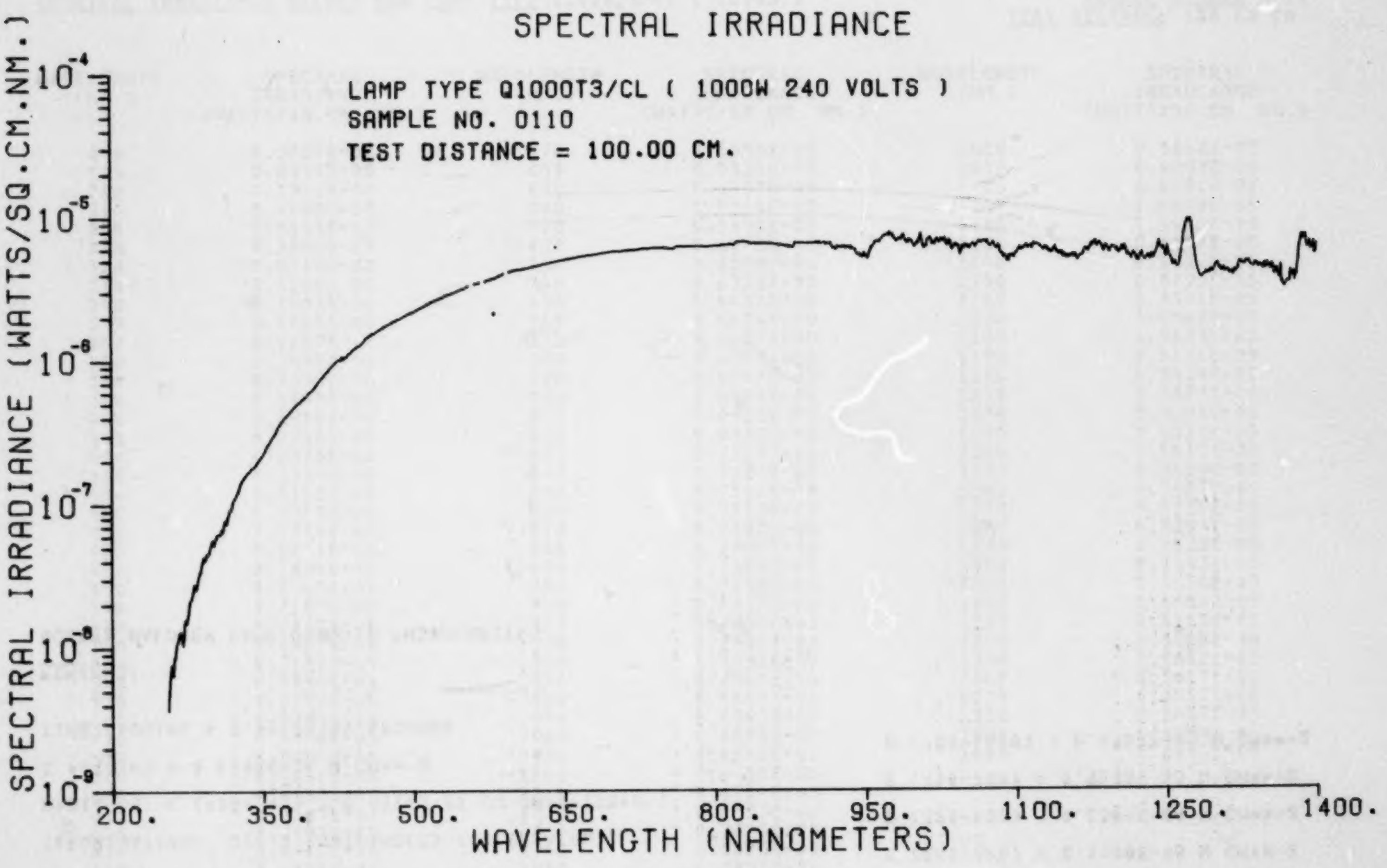
E (700-1400) = 0.4128E-02 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE Q1000T3/CL (1000W)

SAMPLE NUMBER 0110
TEST DISTANCE 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
260	0.6633E-08	670	0.5369E-05	1080	0.6049E-05
270	0.1064E-07	680	0.5473E-05	1090	0.5193E-05
280	0.2327E-07	690	0.5610E-05	1100	0.5573E-05
290	0.3989E-07	700	0.5754E-05	1110	0.6208E-05
300	0.5647E-07	710	0.5832E-05	1120	0.6419E-05
310	0.6583E-07	720	0.5878E-05	1130	0.5970E-05
320	0.9900E-07	730	0.6009E-05	1140	0.5735E-05
330	0.1478E-06	740	0.6082E-05	1150	0.5122E-05
340	0.1814E-06	750	0.6085E-05	1160	0.5285E-05
350	0.2197E-06	760	0.5990E-05	1170	0.5843E-05
360	0.2944E-06	770	0.6250E-05	1180	0.6473E-05
370	0.3863E-06	780	0.6257E-05	1190	0.6206E-05
380	0.4643E-06	790	0.6245E-05	1200	0.5661E-05
390	0.5431E-06	800	0.6318E-05	1210	0.5617E-05
400	0.6334E-06	810	0.6397E-05	1220	0.5045E-05
410	0.7780E-06	820	0.6381E-05	1230	0.5071E-05
420	0.9355E-06	830	0.6763E-05	1240	0.5685E-05
430	0.1064E-05	840	0.6588E-05	1250	0.5357E-05
440	0.1194E-05	850	0.6571E-05	1260	0.4424E-05
450	0.1347E-05	860	0.6503E-05	1270	0.9152E-05
460	0.1552E-05	870	0.6332E-05	1280	0.4588E-05
470	0.1709E-05	880	0.6499E-05	1290	0.4050E-05
480	0.1889E-05	890	0.6573E-05	1300	0.4577E-05
490	0.2036E-05	900	0.6596E-05	1310	0.4140E-05
500	0.2189E-05	910	0.6662E-05	1320	0.4124E-05
510	0.2403E-05	920	0.6013E-05	1330	0.4828E-05
520	0.2602E-05	930	0.6249E-05	1340	0.4646E-05
530	0.2788E-05	940	0.5889E-05	1350	0.4527E-05
540	0.2982E-05	950	0.5414E-05	1360	0.4296E-05
550	0.3192E-05	960	0.6658E-05	1370	0.3387E-05
560	**	970	0.7362E-05	1380	0.3800E-05
570	**	980	0.7031E-05	1390	0.6162E-05
580	0.3757E-05	990	0.6757E-05	1400	0.6760E-05
590	0.4032E-05	1000	0.6274E-05		
600	0.4276E-05	1010	0.6254E-05		
610	0.4382E-05	1020	0.6614E-05		
620	0.4533E-05	1030	0.6805E-05		
630	0.4738E-05	1040	0.6289E-05		
640	0.4887E-05	1050	0.6303E-05		
650	0.5065E-05	1060	0.6052E-05		
660	0.5210E-05	1070	0.6684E-05		

**-VALUE BELOW DETECTOR SENSITIVITY


SPECTRAL IRRADIANCE
LAMP TYPE Q1000T3/CL (1000W 240 VOLTS)
SAMPLE NO. 0110
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-4
10^-5
10^-6
10^-7
10^-8
10^-9
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: Q1000T3/CL (1000W)

DATE TESTED: JUL 05, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 240.0 VOLTS

ILLUMINATION: 227.0 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.5924E 07 UW CM**-2SR**-1

I (ACGIH) = 0.6104E-06 W CM**-2

TIME (ACGIH) = 0.4915E+04 SECONDS

REMARKS:

QUARTZ HALOGEN LAMP USED IN PHOTOCOPIERS

SAMPLE NUMBER: 0111

TIME OF DAY: 1457

IRRADIANCES:

E (200-260) = 0.3417E-08 W CM**-2

E (260-320) = 0.1990E-05 W CM**-2

E (320-400) = 0.2304E-04 W CM**-2

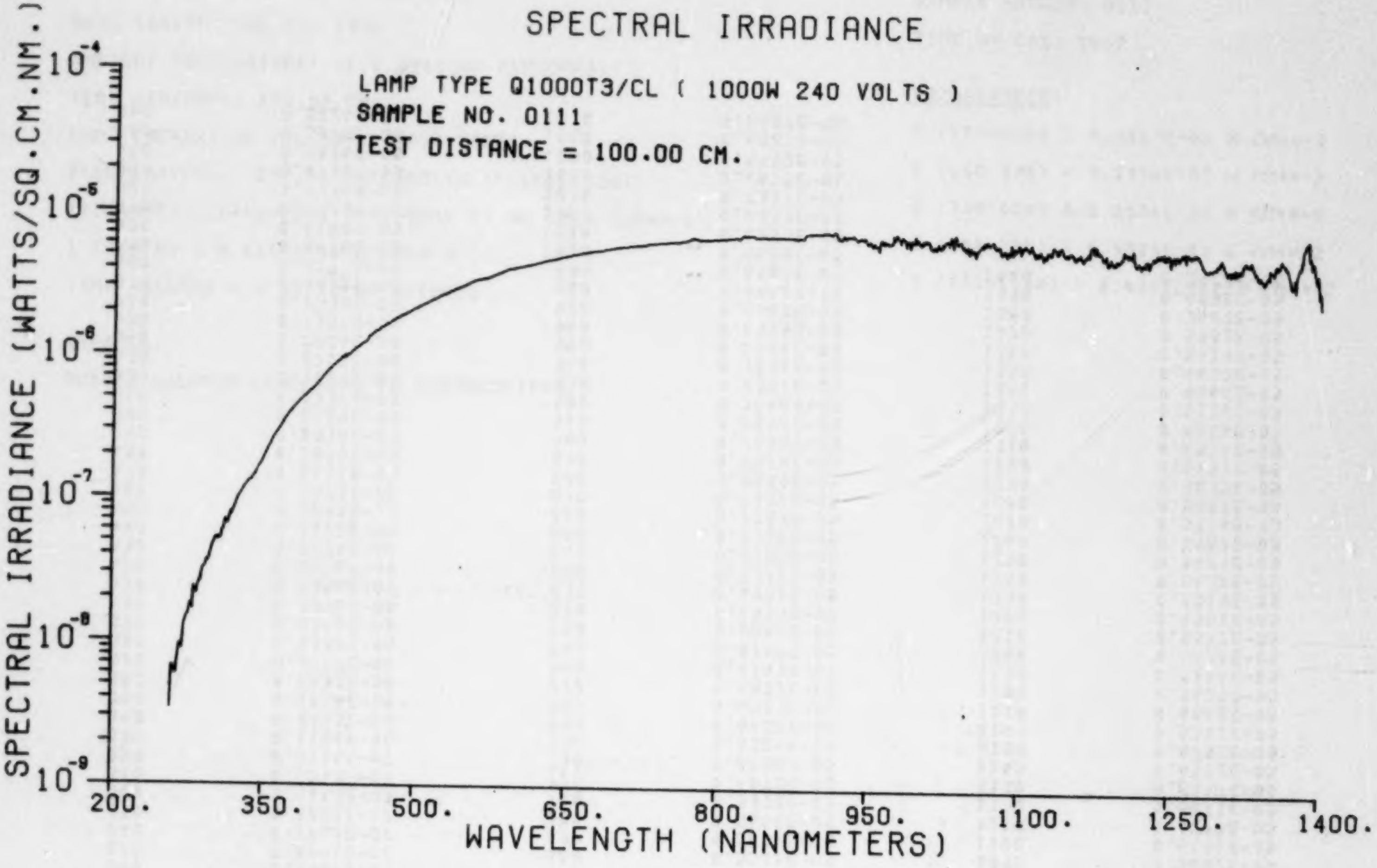
E (400-700) = 0.9503E-03 W CM**-2

E (700-1400) = 0.4307E-02 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE Q1000T3/CL (1000W)

SAMPLE NUMBER 0111
TEST DISTANCE 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
260	0.5887E-08	670	0.5428E-05	1080	0.5662E-05
270	0.8991E-08	680	0.5531E-05	1090	0.6257E-05
280	0.1711E-07	690	0.5697E-05	1100	0.6191E-05
290	0.3098E-07	700	0.5866E-05	1110	0.6273E-05
300	0.4643E-07	710	0.5992E-05	1120	0.5671E-05
310	0.5892E-07	720	0.6072E-05	1130	0.6007E-05
320	0.8110E-07	730	0.6238E-05	1140	0.6332E-05
330	0.1156E-06	740	0.6326E-05	1150	0.5795E-05
340	0.1403E-06	750	0.6432E-05	1160	0.5341E-05
350	0.1888E-06	760	0.6424E-05	1170	0.6462E-05
360	0.2657E-06	770	0.6807E-05	1180	0.5629E-05
370	0.3497E-06	780	0.6749E-05	1190	0.5146E-05
380	0.4338E-06	790	0.6767E-05	1200	0.5434E-05
390	0.5142E-06	800	0.6846E-05	1210	0.5577E-05
400	0.5996E-06	810	0.6930E-05	1220	0.4901E-05
410	0.7266E-06	820	0.6932E-05	1230	0.5319E-05
420	0.8578E-06	830	0.7311E-05	1240	0.5632E-05
430	0.9774E-06	840	0.7123E-05	1250	0.5474E-05
440	0.1112E-05	850	0.7116E-05	1260	0.5987E-05
450	0.1248E-05	860	0.7153E-05	1270	0.5776E-05
460	0.1471E-05	870	0.7122E-05	1280	0.5087E-05
470	0.1631E-05	880	0.7099E-05	1290	0.4635E-05
480	0.1806E-05	890	0.7574E-05	1300	0.5443E-05
490	0.1968E-05	900	0.7638E-05	1310	0.4576E-05
500	0.2129E-05	910	0.7697E-05	1320	0.4654E-05
510	0.2337E-05	920	0.7068E-05	1330	0.5112E-05
520	0.2527E-05	930	0.7381E-05	1340	0.4060E-05
530	0.2711E-05	940	0.7231E-05	1350	0.4602E-05
540	0.2934E-05	950	0.6568E-05	1360	0.5419E-05
550	0.3157E-05	960	0.6955E-05	1370	0.3532E-05
560	0.3392E-05	970	0.6562E-05	1380	0.5482E-05
570	0.3496E-05	980	0.6840E-05	1390	0.4998E-05
580	0.3757E-05	990	0.6582E-05	1400	0.2472E-05
590	0.4036E-05	1000	0.6455E-05		
600	0.4180E-05	1010	0.6254E-05		
610	0.4325E-05	1020	0.6353E-05		
620	0.4498E-05	1030	0.7337E-05		
630	0.4716E-05	1040	0.6675E-05		
640	0.4876E-05	1050	0.5992E-05		
650	0.5078E-05	1060	0.6523E-05		
660	0.5226E-05	1070	0.6687E-05		


SPECTRAL IRRADIANCE
LAMP TYPE Q1000T3/CL (1000W 240 VOLTS)
SAMPLE NO. 0111
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-4
10^-5
10^-6
10^-7
10^-8
10^-9
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: BRH 1000W.

DATE TESTED: MAR 08, 1978

AMBIENT TEMPERATURE: 76.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 1213.6 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1508E 08 UW CM**-2SR**-1

I (ACGIH) = 0.7735E-05 W CM**-2

TIME (ACGIH) = 0.3878E+03 SECONDS

REMARKS:

QUARTZ HALOGEN LAMP USED IN PHOTOCOPIERS

SAMPLE NUMBER: 0112

TIME OF DAY: 1104

IRRADIANCES:

E (200-260) = 0.1278E-05 W CM**-2

E (260-320) = 0.2089E-04 W CM**-2

E (320-400) = 0.1891E-03 W CM**-2

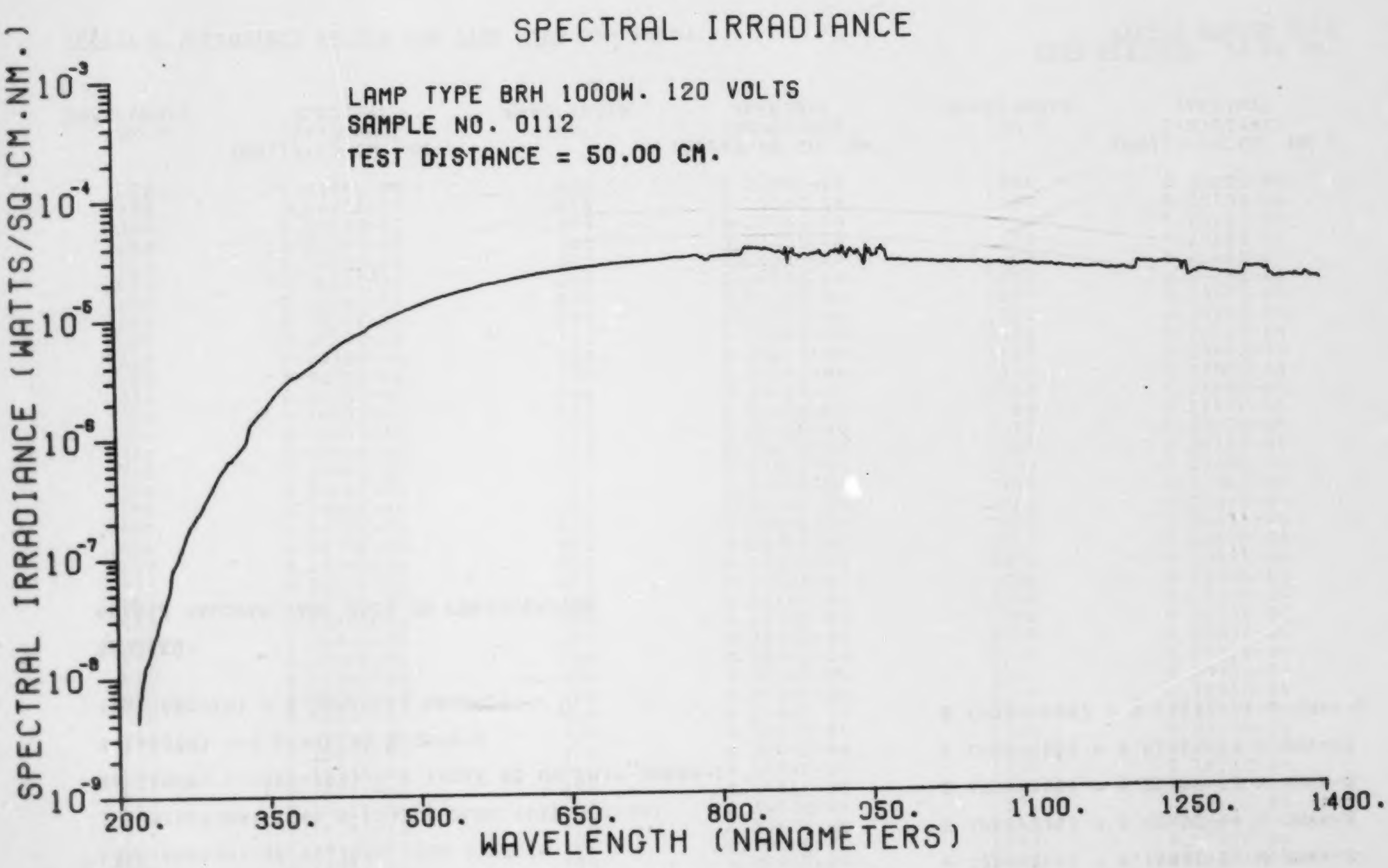
E (400-700) = 0.5002E-02 W CM**-2

E (700-1400) = 0.1837E-01 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE BRH 1000W.

SAMPLE NUMBER 0112
TEST DISTANCE 50.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
220	0.5315E-08	630	0.2342E-04	1040	0.2583E-04
230	0.1445E-07	640	0.2408E-04	1050	0.2582E-04
240	0.2625E-07	650	0.2470E-04	1060	0.2605E-04
250	0.4727E-07	660	0.2529E-04	1070	0.2546E-04
260	0.9438E-07	670	0.2591E-04	1080	0.2576E-04
270	0.1578E-06	680	0.2635E-04	1090	0.2483E-04
280	0.2268E-06	690	0.2695E-04	1100	0.2452E-04
290	0.3078E-06	700	0.2748E-04	1110	0.2500E-04
300	0.4465E-06	710	0.2789E-04	1120	0.2405E-04
310	0.6039E-06	720	0.2820E-04	1130	0.2420E-04
320	0.7357E-06	730	0.2868E-04	1140	0.2373E-04
330	0.9414E-06	740	0.2901E-04	1150	0.2348E-04
340	0.1473E-05	750	0.2959E-04	1160	0.2331E-04
350	0.1823E-05	760	0.3042E-04	1170	0.2290E-04
360	0.2383E-05	770	0.3044E-04	1180	0.2303E-04
370	0.2896E-05	780	0.3159E-04	1190	0.2209E-04
380	0.3290E-05	790	0.2859E-04	1200	0.2221E-04
390	0.3769E-05	800	0.3071E-04	1210	0.2180E-04
400	0.4258E-05	810	0.3118E-04	1220	0.2550E-04
410	0.5056E-05	820	0.3129E-04	1230	0.2469E-04
420	0.5802E-05	830	0.3594E-04	1240	0.2452E-04
430	0.6598E-05	840	0.3570E-04	1250	0.2445E-04
440	0.7369E-05	850	0.3500E-04	1260	0.2424E-04
450	0.8036E-05	860	0.3276E-04	1270	0.1899E-04
460	0.9164E-05	870	0.3016E-04	1280	0.2100E-04
470	0.9997E-05	880	0.3079E-04	1290	0.2048E-04
480	0.1089E-04	890	0.3086E-04	1300	0.1980E-04
490	0.1183E-04	900	0.3210E-04	1310	0.1950E-04
500	0.1270E-04	910	0.3032E-04	1320	0.1893E-04
510	0.1362E-04	920	0.3323E-04	1330	0.2163E-04
520	0.1459E-04	930	0.3174E-04	1340	0.2187E-04
530	0.1545E-04	940	0.3294E-04	1350	0.1897E-04
540	0.1634E-04	950	0.3215E-04	1360	0.1821E-04
550	0.1716E-04	960	0.3403E-04	1370	0.1846E-04
560	0.1800E-04	970	0.2731E-04	1380	0.1806E-04
570	0.1898E-04	980	0.2743E-04	1390	0.1820E-04
530	0.1959E-04	990	0.2718E-04	1400	0.1699E-04
590	0.2040E-04	1000	0.2679E-04		
600	0.2124E-04	1010	0.2657E-04		
610	0.2199E-04	1020	0.2599E-04		
620	0.2274E-04	1030	0.2618E-04		


SPECTRAL IRRADIANCE
LAMP TYPE BRH 1000W. 120 VOLTS
SAMPLE NO. 0112
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-3
10^-4
10^-5
10^-6
10^-7
10^-8
10^-9
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: BRH 1000W.

DATE TESTED: MAR 08, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 1244.8 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1621E 08 UW CM**-2SR**-1

I (ACGIH) = 0.8499E-05 W CM**-2

TIME (ACGIH) = 0.3530E+03 SECONDS

REMARKS:

QUARTZ HALOGEN LAMP USED IN PHOTOCOPIERS

SAMPLE NUMBER: 0113

TIME OF DAY: 1241

IRRADIANCES:

E (200-260) = 0.1500E-05 W CM**-2

E (260-320) = 0.2215E-04 W CM**-2

E (320-400) = 0.2015E-03 W CM**-2

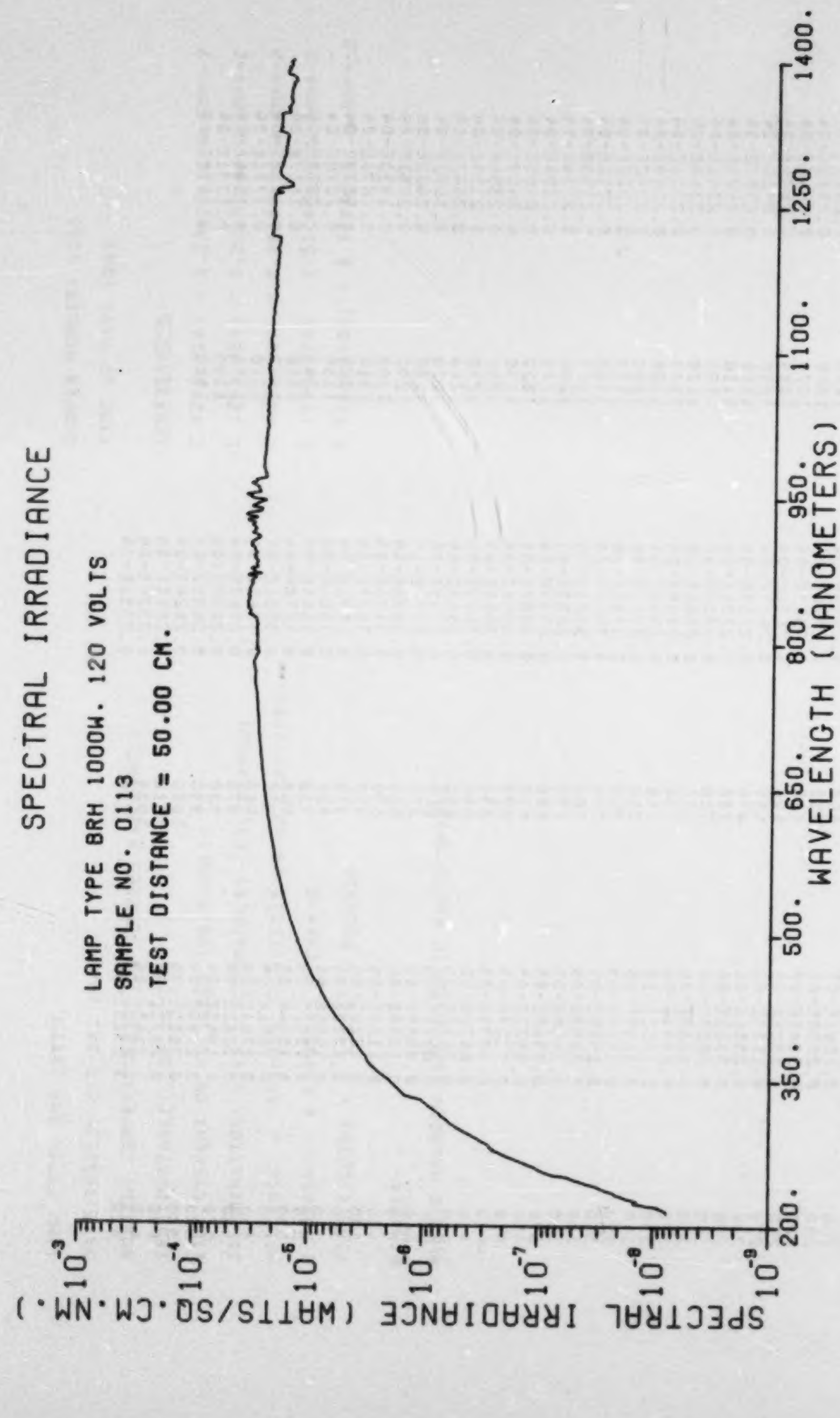
E (400-700) = 0.5126E-02 W CM**-2

E (700-1400) = 0.1803E-01 W CM**-2

SAMPLE NUMBER 0113
TEST DISTANCE 50.00 CM.

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE BRH 1000W.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
220	0.9104E-08	630	0.2386E-04	1040	0.2517E-04
230	0.1801E-07	640	0.2455E-04	1050	0.2513E-04
240	0.2950E-07	650	0.2516E-04	1060	0.2511E-04
250	0.5306E-07	660	0.2573E-04	1070	0.2460E-04
260	0.1025E-06	670	0.2631E-04	1080	0.2506E-04
270	0.1683E-06	680	0.2677E-04	1090	0.2426E-04
280	0.2556E-06	690	0.2739E-04	1100	0.2357E-04
290	0.3335E-06	700	0.2794E-04	1110	0.2424E-04
300	0.4823E-06	710	0.2830E-04	1120	0.2341E-04
310	0.6338E-06	720	0.2864E-04	1130	0.2349E-04
320	0.8059E-06	730	0.2904E-04	1140	0.2306E-04
330	0.1053E-05	740	0.2940E-04	1150	0.2269E-04
340	0.1609E-05	750	0.2993E-04	1160	0.2242E-04
350	0.1964E-05	760	0.3083E-04	1170	0.2222E-04
360	0.2542E-05	770	0.3067E-04	1180	0.2212E-04
370	0.3059E-05	780	0.3181E-04	1190	0.2155E-04
380	0.3468E-05	790	0.2889E-04	1200	0.2134E-04
390	0.3968E-05	800	0.2999E-04	1210	0.2104E-04
400	0.4472E-05	810	0.3007E-04	1220	0.2465E-04
410	0.5289E-05	820	0.3006E-04	1230	0.2409E-04
420	0.6099E-05	830	0.3481E-04	1240	0.2358E-04
430	0.6872E-05	840	0.3620E-04	1250	0.2354E-04
440	0.7672E-05	850	0.3518E-04	1260	0.2347E-04
450	0.8374E-05	860	0.3295E-04	1270	0.1652E-04
460	0.9549E-05	870	0.3074E-04	1280	0.2082E-04
470	0.1040E-04	880	0.3092E-04	1290	0.2051E-04
480	0.1134E-04	890	0.3176E-04	1300	0.1933E-04
490	0.1226E-04	900	0.3427E-04	1310	0.1896E-04
500	0.1312E-04	910	0.2992E-04	1320	0.1822E-04
510	0.1406E-04	920	0.3321E-04	1330	0.2078E-04
520	0.1502E-04	930	0.3644E-04	1340	0.2072E-04
530	0.1594E-04	940	0.3378E-04	1350	0.1817E-04
540	0.1681E-04	950	0.3531E-04	1360	0.1732E-04
550	0.1761E-04	960	0.3062E-04	1370	0.1711E-04
560	0.1848E-04	970	0.2562E-04	1380	0.1564E-04
570	0.1945E-04	980	0.2692E-04	1390	0.1791E-04
580	0.2003E-04	990	0.2695E-04	1400	0.1628E-04
590	0.2085E-04	1000	0.2626E-04		
600	0.2171E-04	1010	0.2615E-04		
610	0.2245E-04	1020	0.2526E-04		
620	0.2318E-04	1030	0.2550E-04		



SPECTRAL IRRADIANCE
LAMP TYPE BRH 1000W. 120 VOLTS
SAMPLE NO. 0113
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: BRH 1000W.

DATE TESTED: MAR 08, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 1249.6 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1713E 08 UW CM**-2SR**-1

I (ACGIH) = 0.8321E-05 W CM**-2

TIME (ACGIH) = 0.3606E+03 SECONDS

REMARKS:

QUARTZ HALOGEN LAMP USED IN PHOTOCOPIERS

SAMPLE NUMBER: 0114

TIME OF DAY: 1436

IRRADIANCES:

E (200-260) = 0.1454E-05 W CM**-2

E (260-320) = 0.2213E-04 W CM**-2

E (320-400) = 0.1989E-03 W CM**-2

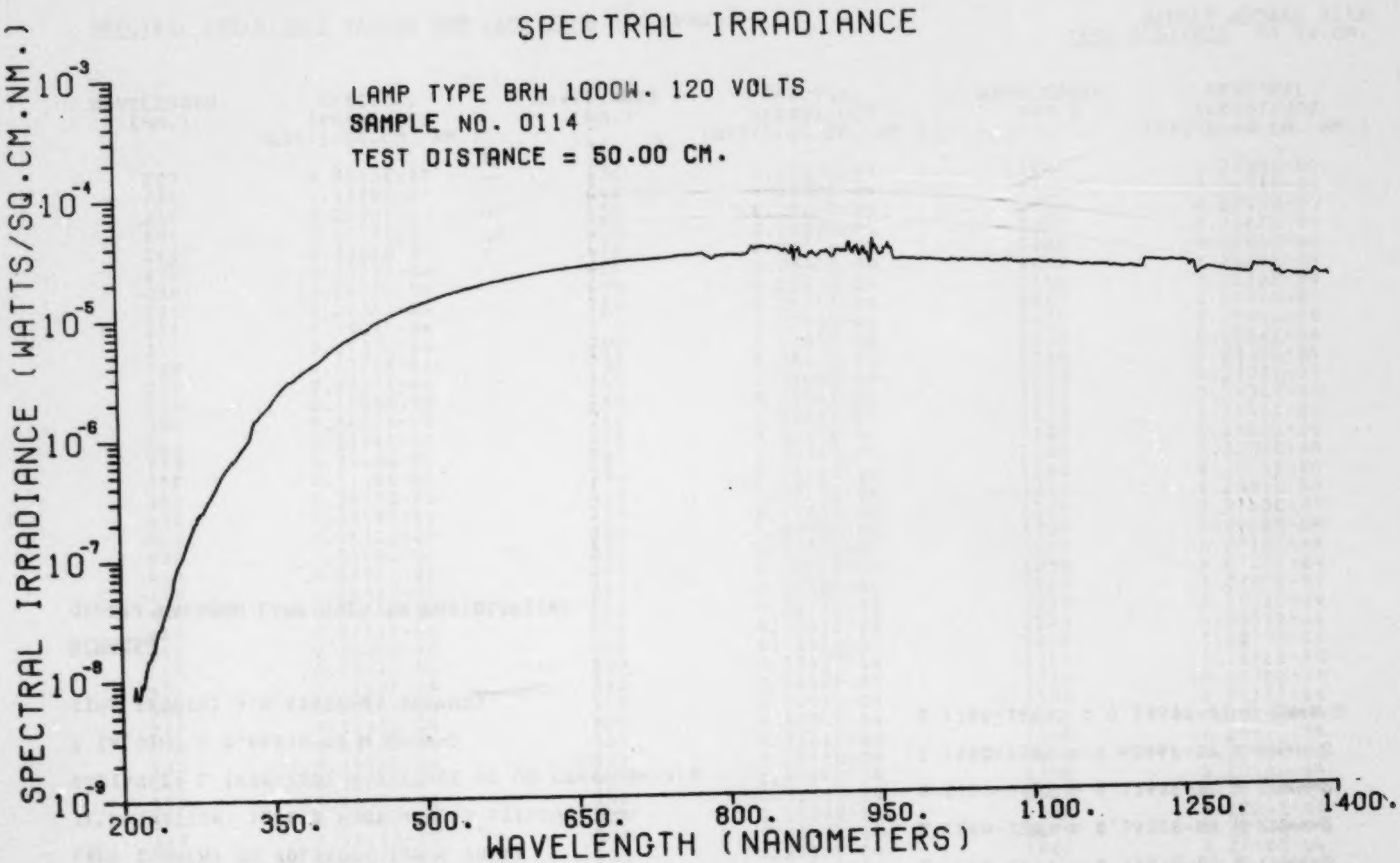
E (400-700) = 0.5146E-02 W CM**-2

E (700-1400) = 0.1827E-01 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE BRH 1000W.

SAMPLE NUMBER 0114
TEST DISTANCE 50.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
210	0.6730E-08	620	0.2331E-04	1030	0.2601E-04
220	0.8876E-08	630	0.2401E-04	1040	0.2570E-04
230	0.1709E-07	640	0.2467E-04	1050	0.2580E-04
240	0.2921E-07	650	0.2532E-04	1060	0.2566E-04
250	0.5348E-07	660	0.2588E-04	1070	0.2532E-04
260	0.1006E-06	670	0.2650E-04	1080	0.2566E-04
270	0.1671E-06	680	0.2697E-04	1090	0.2471E-04
280	0.2455E-06	690	0.2759E-04	1100	0.2426E-04
290	0.3278E-06	700	0.2816E-04	1110	0.2474E-04
300	0.4739E-06	710	0.2851E-04	1120	0.2390E-04
310	0.6333E-06	720	0.2884E-04	1130	0.2377E-04
320	0.7931E-06	730	0.2921E-04	1140	0.2356E-04
330	0.1034E-05	740	0.2958E-04	1150	0.2313E-04
340	0.1581E-05	750	0.3013E-04	1160	0.2286E-04
350	0.1933E-05	760	0.3097E-04	1170	0.2277E-04
360	0.2507E-05	770	0.3107E-04	1180	0.2262E-04
370	0.3036E-05	780	0.3193E-04	1190	0.2205E-04
380	0.3448E-05	790	0.2876E-04	1200	0.2191E-04
390	0.3946E-05	800	0.3060E-04	1210	0.2151E-04
400	0.4438E-05	810	0.3080E-04	1220	0.2475E-04
410	0.5249E-05	820	0.3078E-04	1230	0.2439E-04
420	0.6065E-05	830	0.3536E-04	1240	0.2425E-04
430	0.6833E-05	840	0.3568E-04	1250	0.2393E-04
440	0.7647E-05	850	0.3496E-04	1260	0.2361E-04
450	0.8356E-05	860	0.3264E-04	1270	0.1866E-04
460	0.9532E-05	870	0.3067E-04	1280	0.2089E-04
470	0.1037E-04	880	0.2913E-04	1290	0.2010E-04
480	0.1129E-04	890	0.3060E-04	1300	0.1937E-04
490	0.1224E-04	900	0.3203E-04	1310	0.1917E-04
500	0.1312E-04	910	0.2938E-04	1320	0.1860E-04
510	0.1406E-04	920	0.3167E-04	1330	0.2127E-04
520	0.1505E-04	930	0.3405E-04	1340	0.2135E-04
530	0.1595E-04	940	0.3190E-04	1350	0.1876E-04
540	0.1686E-04	950	0.3538E-04	1360	0.1829E-04
550	0.1769E-04	960	0.3350E-04	1370	0.1776E-04
560	0.1857E-04	970	0.2702E-04	1380	0.1728E-04
570	0.1949E-04	980	0.2721E-04	1390	0.1834E-04
580	0.2017E-04	990	0.2707E-04	1400	0.1714E-04
590	0.2102E-04	1000	0.2656E-04		
600	0.2184E-04	1010	0.2647E-04		
610	0.2259E-04	1020	0.2585E-04		


SPECTRAL IRRADIANCE
LAMP TYPE BRH 1000W. 120 VOLTS
SAMPLE NO. 0114
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10-3
10-4
10-5
10-6
10-7
10-8
10-9
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: BCK 500W.

DATE TESTED: MAR 06, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 1172.8 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1950E 08 UW CM**-2SR**-1

I (ACGIH) = 0.6893E-05 W CM**-2

TIME (ACGIH) = 0.4353E+03 SECONDS

<u>REMARKS</u>:

QUARTZ HALOGEN LAMP USED IN PHOTOCOPIERS

SAMPLE NUMBER: 0115

TIME OF DAY: 1542

<u>IRRADIANCES</u>:

E (200-260) = 0.1165E-05 W CM**-2

E (260-320) = 0.1838E-04 W CM**-2

E (320-400) = 0.1760E-03 W CM**-2

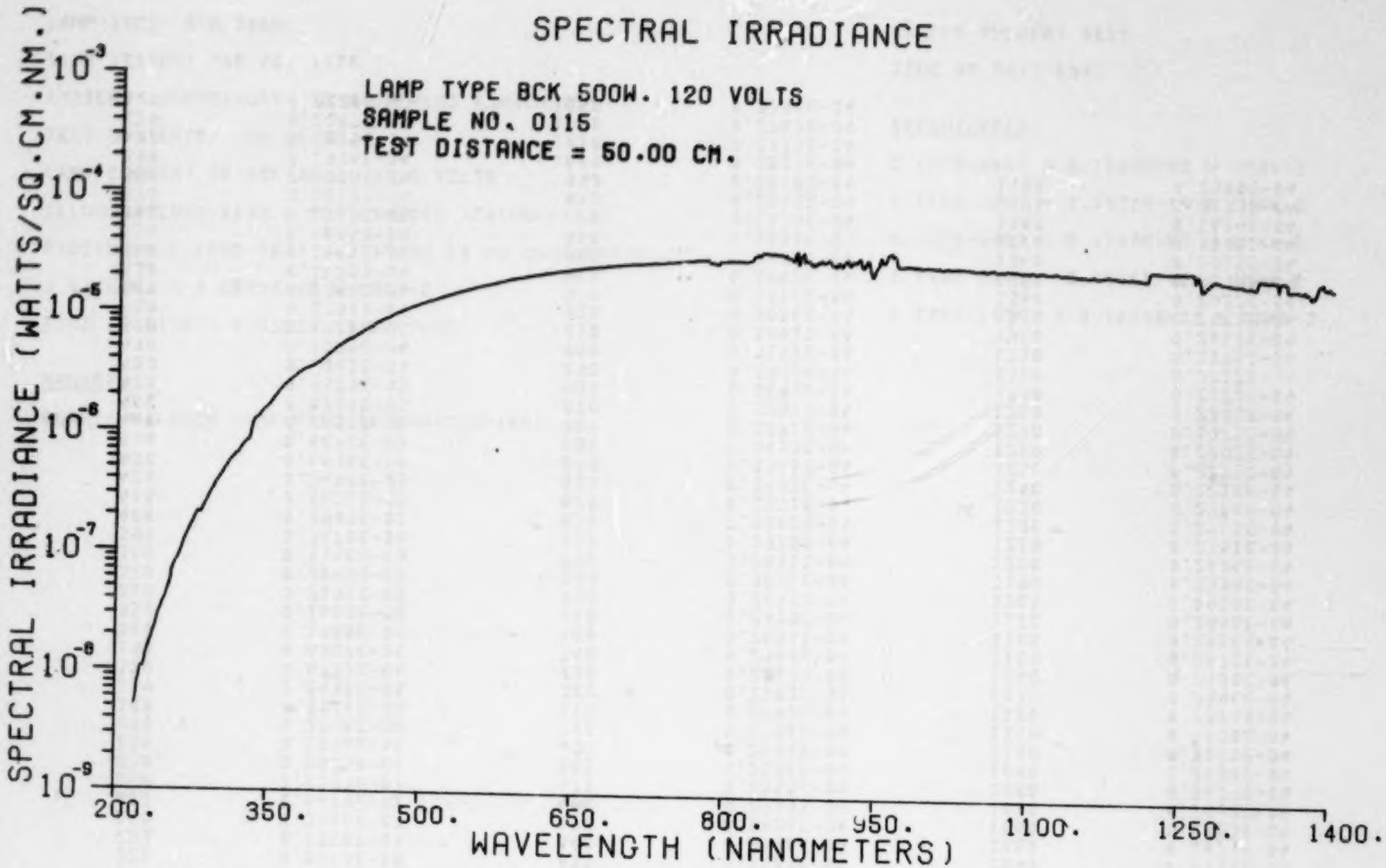
E (400-700) = 0.4846E-02 W CM**-2

E (700-1400) = 0.1889E-01 W CM**-2

SAMPLE NUMBER 0115
TEST DISTANCE 50.00 CM.

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE BCK 500W.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
220	0.5543E-08	630	0.2289E-04	1040	0.2733E-04
230	0.1320E-07	640	0.2358E-04	1050	0.2671E-04
240	0.2508E-07	650	0.2426E-04	1060	0.2713E-04
250	0.4479E-07	660	0.2490E-04	1070	0.2662E-04
260	0.8332E-07	670	0.2545E-04	1080	0.2680E-04
270	0.1375E-06	680	0.2596E-04	1090	0.2638E-04
280	0.2098E-06	690	0.2661E-04	1100	0.2618E-04
290	0.2734E-06	700	0.2706E-04	1110	0.2630E-04
300	0.3926E-06	710	0.2743E-04	1120	0.2574E-04
310	0.5437E-06	720	0.2781E-04	1130	0.2546E-04
320	0.6770E-06	730	0.2813E-04	1140	0.2530E-04
330	0.8507E-06	740	0.2844E-04	1150	0.2475E-04
340	0.1355E-05	750	0.2894E-04	1160	0.2456E-04
350	0.1682E-05	760	0.2955E-04	1170	0.2446E-04
360	0.2191E-05	770	0.3001E-04	1180	0.2450E-04
370	0.2665E-05	780	0.3036E-04	1190	0.2394E-04
380	0.3148E-05	790	0.2811E-04	1200	0.2424E-04
390	0.3470E-05	800	0.2978E-04	1210	0.2351E-04
400	0.3909E-05	810	0.3008E-04	1220	0.2765E-04
410	0.4632E-05	820	0.2991E-04	1230	0.2740E-04
420	0.5400E-05	830	0.3422E-04	1240	0.2710E-04
430	0.6096E-05	840	0.3566E-04	1250	0.2731E-04
440	0.6891E-05	850	0.3455E-04	1260	0.2707E-04
450	0.7650E-05	860	0.3277E-04	1270	0.1971E-04
460	0.8709E-05	870	0.3257E-04	1280	0.2351E-04
470	0.9529E-05	880	0.3091E-04	1290	0.2273E-04
480	0.1041E-04	890	0.2992E-04	1300	0.2212E-04
490	0.1129E-04	900	0.3147E-04	1310	0.2178E-04
500	0.1210E-04	910	0.3001E-04	1320	0.2117E-04
510	0.1290E-04	920	0.3058E-04	1330	0.2421E-04
520	0.1392E-04	930	0.3211E-04	1340	0.2412E-04
530	0.1478E-04	940	0.3042E-04	1350	0.2390E-04
540	0.1564E-04	950	0.2876E-04	1360	0.2015E-04
550	0.1655E-04	960	0.3581E-04	1370	0.1998E-04
560	0.1745E-04	970	0.2829E-04	1380	0.1824E-04
570	0.1812E-04	980	0.2842E-04	1390	0.2279E-04
580	0.1908E-04	990	0.2818E-04	1400	0.2040E-04
590	0.1996E-04	1000	0.2817E-04		
600	0.2075E-04	1010	0.2775E-04		
610	0.2147E-04	1020	0.2747E-04		
620	0.2220E-04	1030	0.2755E-04		


SPECTRAL IRRADIANCE
LAMP TYPE BCK 500W. 120 VOLTS
SAMPLE NO. 0115
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-3
10^-4
10^-5
10^-6
10^-7
10^-8
10^-9
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: BCK 500W.

DATE TESTED: MAR 06, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 1170.3 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1927E 08 UW CM**-2SR**-1

I (ACGIH) = 0.7026E-05 W CM**-2

TIME (ACGIH) = 0.4270E+03 SECONDS

<u>REMARKS</u>:

QUARTZ HALOGEN LAMP USED IN PHOTOCOPIERS

SAMPLE NUMBER: 0116

TIME OF DAY: 1728

<u>IRRADIANCES</u>:

E (200-260) = 0.1170E-05 W CM**-2

E (260-320) = 0.1909E-04 W CM**-2

E (320-400) = 0.1764E-03 W CM**-2

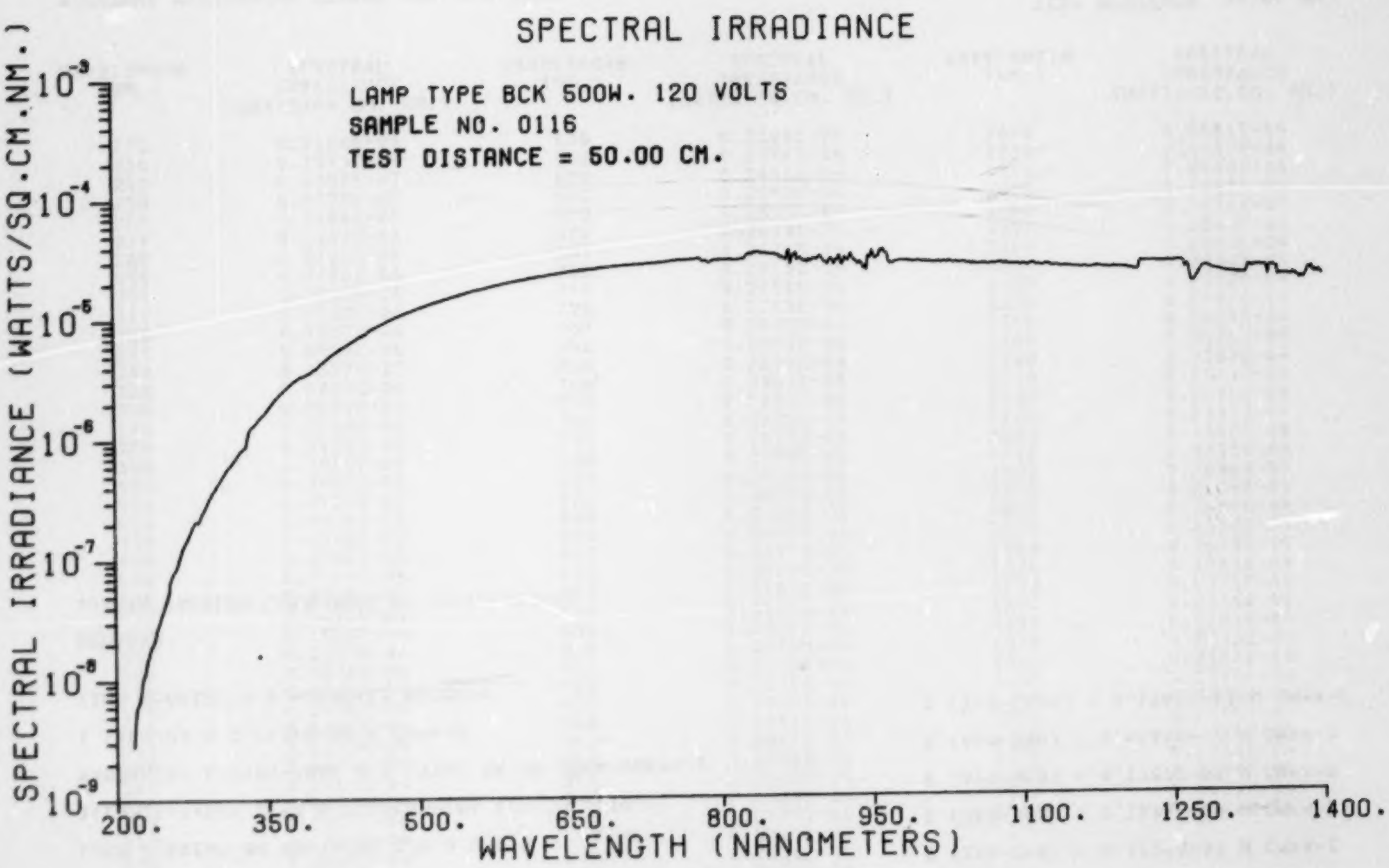
E (400-700) = 0.4840E-02 W CM**-2

E (700-1400) = 0.1886E-01 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE BCK 500W.

SAMPLE NUMBER 0116
TEST DISTANCE 50.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
220	0.5698E-08	630	0.2284E-04	1040	0.2740E-04
230	0.1340E-07	640	0.2354E-04	1050	0.2667E-04
240	0.2447E-07	650	0.2422E-04	1060	0.2671E-04
250	0.4456E-07	660	0.2483E-04	1070	0.2668E-04
260	0.8334E-07	670	0.2542E-04	1080	0.2698E-04
270	0.1415E-06	680	0.2595E-04	1090	0.2631E-04
280	0.2124E-06	690	0.2661E-04	1100	0.2601E-04
290	0.2791E-06	700	0.2709E-04	1110	0.2644E-04
300	0.3977E-06	710	0.2742E-04	1120	0.2564E-04
310	0.5474E-06	720	0.2779E-04	1130	0.2546E-04
320	0.6998E-06	730	0.2809E-04	1140	0.2503E-04
330	0.8749E-06	740	0.2852E-04	1150	0.2494E-04
340	0.1373E-05	750	0.2907E-04	1160	0.2441E-04
350	0.1698E-05	760	0.2983E-04	1170	0.2438E-04
360	0.2200E-05	770	0.3003E-04	1180	0.2449E-04
370	0.2684E-05	780	0.3058E-04	1190	0.2407E-04
380	0.3159E-05	790	0.2851E-04	1200	0.2430E-04
390	0.3486E-05	800	0.2988E-04	1210	0.2351E-04
400	0.3927E-05	810	0.2995E-04	1220	0.2742E-04
410	0.4649E-05	820	0.2994E-04	1230	0.2743E-04
420	0.5419E-05	830	0.3383E-04	1240	0.2711E-04
430	0.6105E-05	840	0.3432E-04	1250	0.2711E-04
440	0.6882E-05	850	0.3329E-04	1260	0.2735E-04
450	0.7653E-05	860	0.3162E-04	1270	0.1843E-04
460	0.8706E-05	870	0.3162E-04	1280	0.2395E-04
470	0.9537E-05	880	0.3076E-04	1290	0.2342E-04
480	0.1043E-04	890	0.2951E-04	1300	0.2227E-04
490	0.1130E-04	900	0.3166E-04	1310	0.2185E-04
500	0.1213E-04	910	0.2984E-04	1320	0.2141E-04
510	0.1294E-04	920	0.3014E-04	1330	0.2420E-04
520	0.1388E-04	930	0.3232E-04	1340	0.2451E-04
530	0.1471E-04	940	0.2792E-04	1350	0.2459E-04
540	0.1558E-04	950	0.3033E-04	1360	0.2068E-04
550	0.1654E-04	960	0.3506E-04	1370	0.2086E-04
560	0.1741E-04	970	0.2738E-04	1380	0.1917E-04
570	0.1818E-04	980	0.2862E-04	1390	0.2249E-04
580	0.1901E-04	990	0.2832E-04	1400	0.1972E-04
590	0.1985E-04	1000	0.2817E-04		
600	0.2071E-04	1010	0.2783E-04		
610	0.2142E-04	1020	0.2752E-04		
620	0.2216E-04	1030	0.2799E-04		


SPECTRAL IRRADIANCE
LAMP TYPE BCK 500W. 120 VOLTS
SAMPLE NO. 0116
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-3
10^-4
10^-5
10^-6
10^-7
10^-8
10^-9
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: BCK 500W.

DATE TESTED: MAR 06, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 1182.5 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1938E 08 UW CM**-2SR**-1

I (ACGIH) = 0.7027E-05 W CM**-2

TIME (ACGIH) = 0.4269E+03 SECONDS

REMARKS:

QUARTZ HALOGEN LAMP USED IN PHOTOCOPIERS

SAMPLE NUMBER: 0117

TIME OF DAY: 1905

IRRADIANCES:

E (200-260) = 0.1224E-05 W CM**-2

E (260-320) = 0.1899E-04 W CM**-2

E (320-400) = 0.1787E-03 W CM**-2

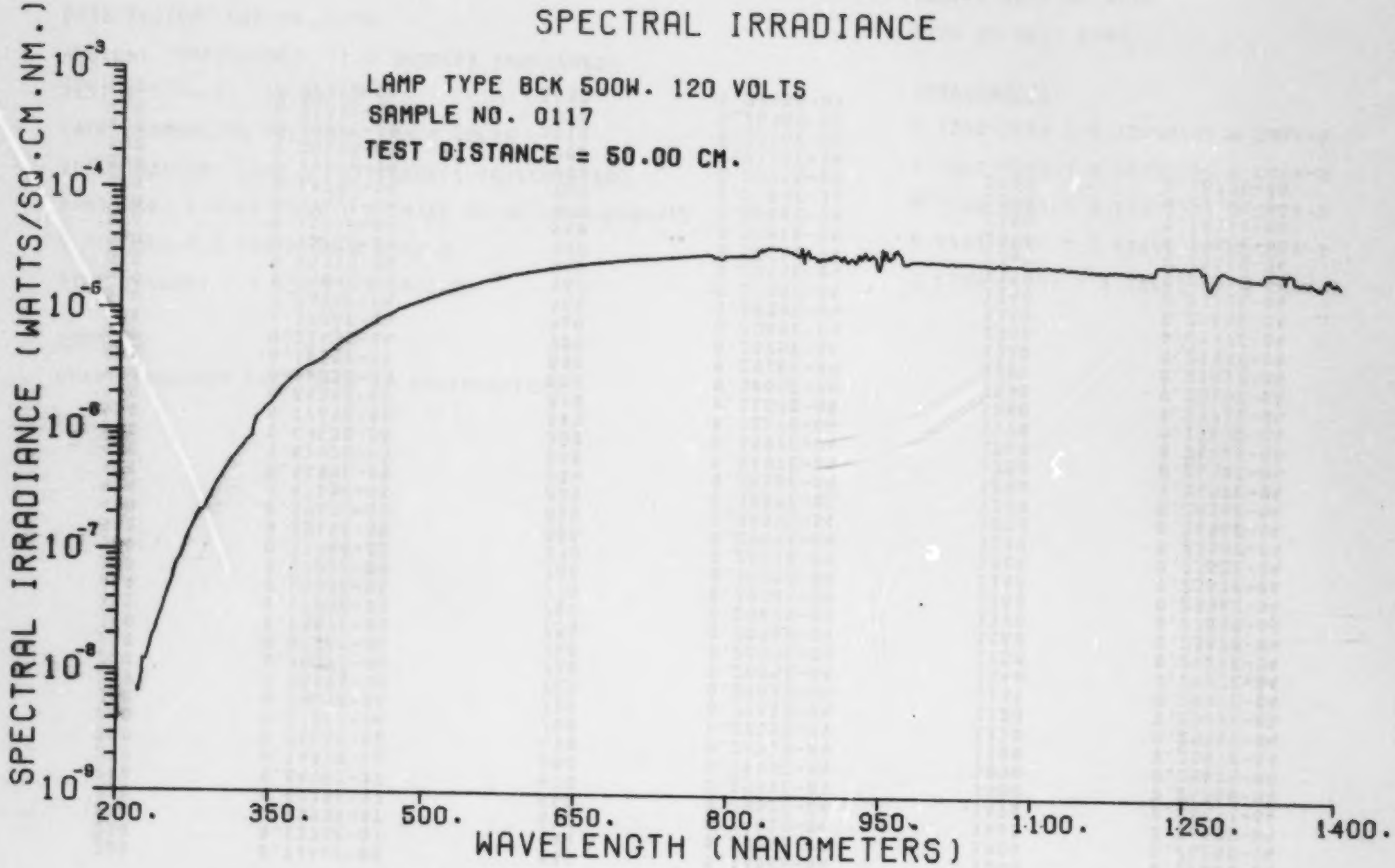
E (400-700) = 0.4885E-02 W CM**-2

E (700-1400) = 0.1863E-01 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE BCK 500W.

SAMPLE NUMBER 0117
TEST DISTANCE 50.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
220	0.7160E-08	630	0.2300E-04	1040	0.2686E-04
230	0.1375E-07	640	0.2376E-04	1050	0.2655E-04
240	0.2553E-07	650	0.2441E-04	1060	0.2640E-04
250	0.4775E-07	660	0.2502E-04	1070	0.2621E-04
260	0.8426E-07	670	0.2559E-04	1080	0.2636E-04
270	0.1407E-06	680	0.2609E-04	1090	0.2560E-04
280	0.2128E-06	690	0.2671E-04	1100	0.2551E-04
290	0.2786E-06	700	0.2715E-04	1110	0.2594E-04
300	0.3969E-06	710	0.2751E-04	1120	0.2522E-04
310	0.5512E-06	720	0.2783E-04	1130	0.2497E-04
320	0.7027E-06	730	0.2825E-04	1140	0.2482E-04
330	0.8796E-06	740	0.2859E-04	1150	0.2424E-04
340	0.1387E-05	750	0.2898E-04	1160	0.2387E-04
350	0.1720E-05	760	0.2962E-04	1170	0.2383E-04
360	0.2235E-05	770	0.3008E-04	1180	0.2396E-04
370	0.2722E-05	780	0.3038E-04	1190	0.2347E-04
380	0.3198E-05	790	0.2811E-04	1200	0.2382E-04
390	0.3515E-05	800	0.2999E-04	1210	0.2310E-04
400	0.3982E-05	810	0.3035E-04	1220	0.2696E-04
410	0.4713E-05	820	0.3009E-04	1230	0.2634E-04
420	0.5499E-05	830	0.3416E-04	1240	0.2659E-04
430	0.6192E-05	840	0.3497E-04	1250	0.2630E-04
440	0.6988E-05	850	0.3397E-04	1260	0.2670E-04
450	0.7769E-05	860	0.3220E-04	1270	0.1763E-04
460	0.8828E-05	870	0.3182E-04	1280	0.2371E-04
470	0.9651E-05	880	0.3004E-04	1290	0.2315E-04
480	0.1055E-04	890	0.2918E-04	1300	0.2181E-04
490	0.1143E-04	900	0.3075E-04	1310	0.2133E-04
500	0.1226E-04	910	0.3060E-04	1320	0.2107E-04
510	0.1306E-04	920	0.2830E-04	1330	0.2368E-04
520	0.1404E-04	930	0.3188E-04	1340	0.2370E-04
530	0.1491E-04	940	0.3041E-04	1350	0.2395E-04
540	0.1578E-04	950	0.3021E-04	1360	0.1986E-04
550	0.1671E-04	960	0.3356E-04	1370	0.1988E-04
560	0.1762E-04	970	0.2666E-04	1380	0.1834E-04
570	0.1829E-04	980	0.2780E-04	1390	0.2115E-04
580	0.1927E-04	990	0.2775E-04	1400	0.1873E-04
590	0.2014E-04	1000	0.2775E-04		
600	0.2088E-04	1010	0.2736E-04		
610	0.2159E-04	1020	0.2698E-04		
620	0.2232E-04	1030	0.2738E-04		


SPECTRAL IRRADIANCE
LAMP TYPE BCK 500W. 120 VOLTS
SAMPLE NO. 0117
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-3
10^-4
10^-5
10^-6
10^-7
10^-8
10^-9
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: QH650T3/CL

DATE TESTED: APR 10, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 117.0 VOLTS

ILLUMINATION: 19.1 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.4407E 08 UW CM**-2SR**-1

I (ACGIH) = 0.0 W CM**-2

SAMPLE NUMBER: 0118

TIME OF DAY: 1313

IRRADIANCES:

E (320-400) = 0.3649E-06 W CM**-2

E (400-700) = 0.9315E-04 W CM**-2

E (700-1400) = 0.1654E-02 W CM**-2

REMARKS:

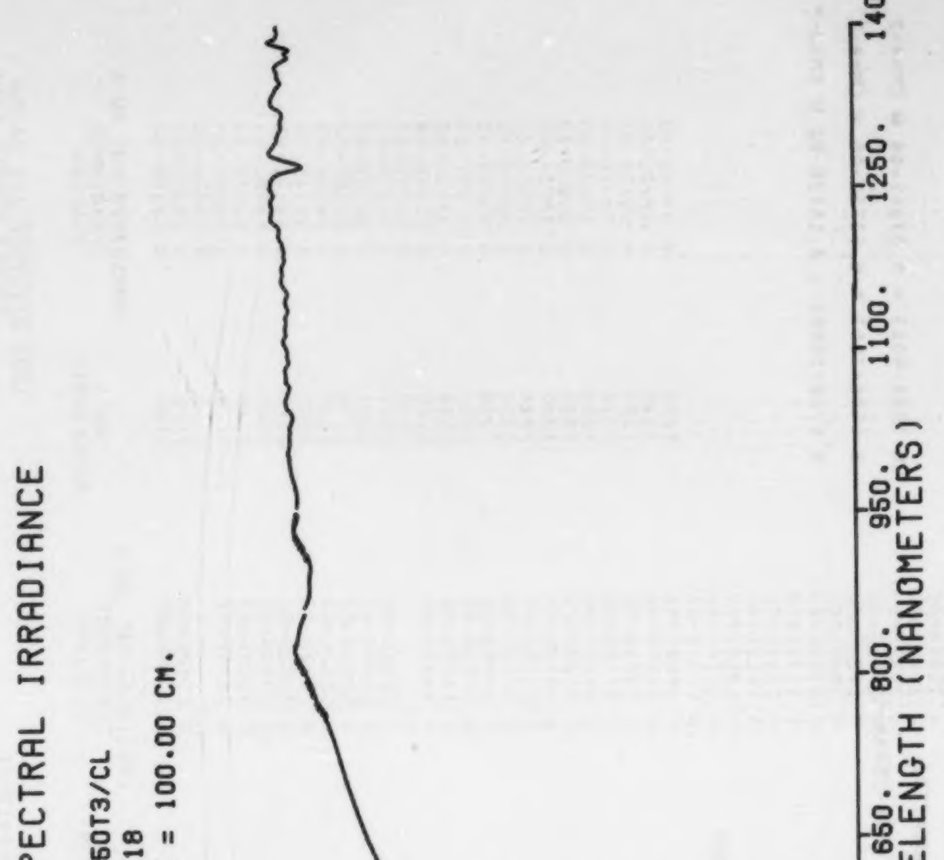
QUARTZ HALOGEN LAMP USED IN PHOTOCOPIERS

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE QH650T3/CL

SAMPLE NUMBER 0118
TEST DISTANCE 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
330	0.7678E-09	740	0.1136E-05	1150	0.2561E-05
340	0.1609E-08	750	0.1213E-05	1160	0.2697E-05
350	0.2649E-08	760	0.1316E-05	1170	0.2747E-05
360	0.3892E-08	770	0.1394E-05	1180	0.2738E-05
370	0.5433E-08	780	0.1572E-05	1190	0.2672E-05
380	0.7270E-08	790	0.1693E-05	1200	0.2742E-05
390	0.9544E-08	800	0.1835E-05	1210	0.2889E-05
400	0.1254E-07	810	0.2057E-05	1220	0.3273E-05
410	0.1666E-07	820	0.2238E-05	1230	0.3303E-05
420	0.2313E-07	830	0.2222E-05	1240	0.3334E-05
430	0.2819E-07	840	0.2129E-05	1250	0.3363E-05
440	0.3424E-07	850	0.2032E-05	1260	0.3258E-05
450	0.4724E-07	860	**	1270	0.1952E-05
460	0.5889E-07	870	0.1811E-05	1280	0.3182E-05
470	0.7092E-07	880	0.1744E-05	1290	0.3184E-05
480	0.8385E-07	890	0.1753E-05	1300	0.2940E-05
490	0.9917E-07	900	0.1720E-05	1310	0.2800E-05
500	0.1165E-06	910	0.1787E-05	1320	0.2728E-05
510	0.1345E-06	920	0.1981E-05	1330	0.3338E-05
520	0.1565E-06	930	0.2233E-05	1340	0.3107E-05
530	0.1797E-06	940	0.2263E-05	1350	0.2839E-05
540	0.2054E-06	950	**	1360	0.3034E-05
550	0.2296E-06	960	0.2157E-05	1370	0.2557E-05
560	0.2532E-06	970	0.2176E-05	1380	0.2402E-05
570	0.3017E-06	980	0.2283E-05	1390	0.3042E-05
580	0.3251E-06	990	0.2397E-05	1400	0.3007E-05
590	0.3615E-06	1000	0.2467E-05		
600	0.4023E-06	1010	0.2486E-05		
610	0.4449E-06	1020	0.2449E-05		
620	0.4905E-06	1030	0.2444E-05		
630	0.5331E-06	1040	0.2314E-05		
640	0.5815E-06	1050	0.2590E-05		
650	0.6364E-06	1060	0.2537E-05		
660	0.6828E-06	1070	0.2516E-05		
670	0.7339E-06	1080	0.2613E-05		
680	0.7824E-06	1090	0.2458E-05		
690	0.8386E-06	1100	0.2525E-05		
700	0.8994E-06	1110	0.2716E-05		
710	0.9495E-06	1120	0.2630E-05		
720	0.1014E-05	1130	0.2598E-05		
730	0.1072E-05	1140	0.2521E-05		

**-VALUE BELOW DETECTOR SENSITIVITY



SPECTRAL IRRADIANCE
LAMP TYPE QH650T3/CL
SAMPLE NO. 0118
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
WAVELENGTH (NANOMETERS)
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.

LAMP TYPE: QH650T3/CL

DATE TESTED: APR 10, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 117.0 VOLTS

ILLUMINATION: 19.2 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.3574E 08 UW CM**-2SR**-1

I (ACGIH) = 0.0 W CM**-2

SAMPLE NUMBER: 0119

TIME OF DAY: 1510

IRRADIANCES:

E (320-400) = 0.3726E-06 W CM**-2

E (400-700) = 0.9339E-04 W CM**-2

E (700-1400) = 0.1842E-02 W CM**-2

REMARKS:

QUARTZ HALOGEN LAMP USED IN PHOTOCOPIERS

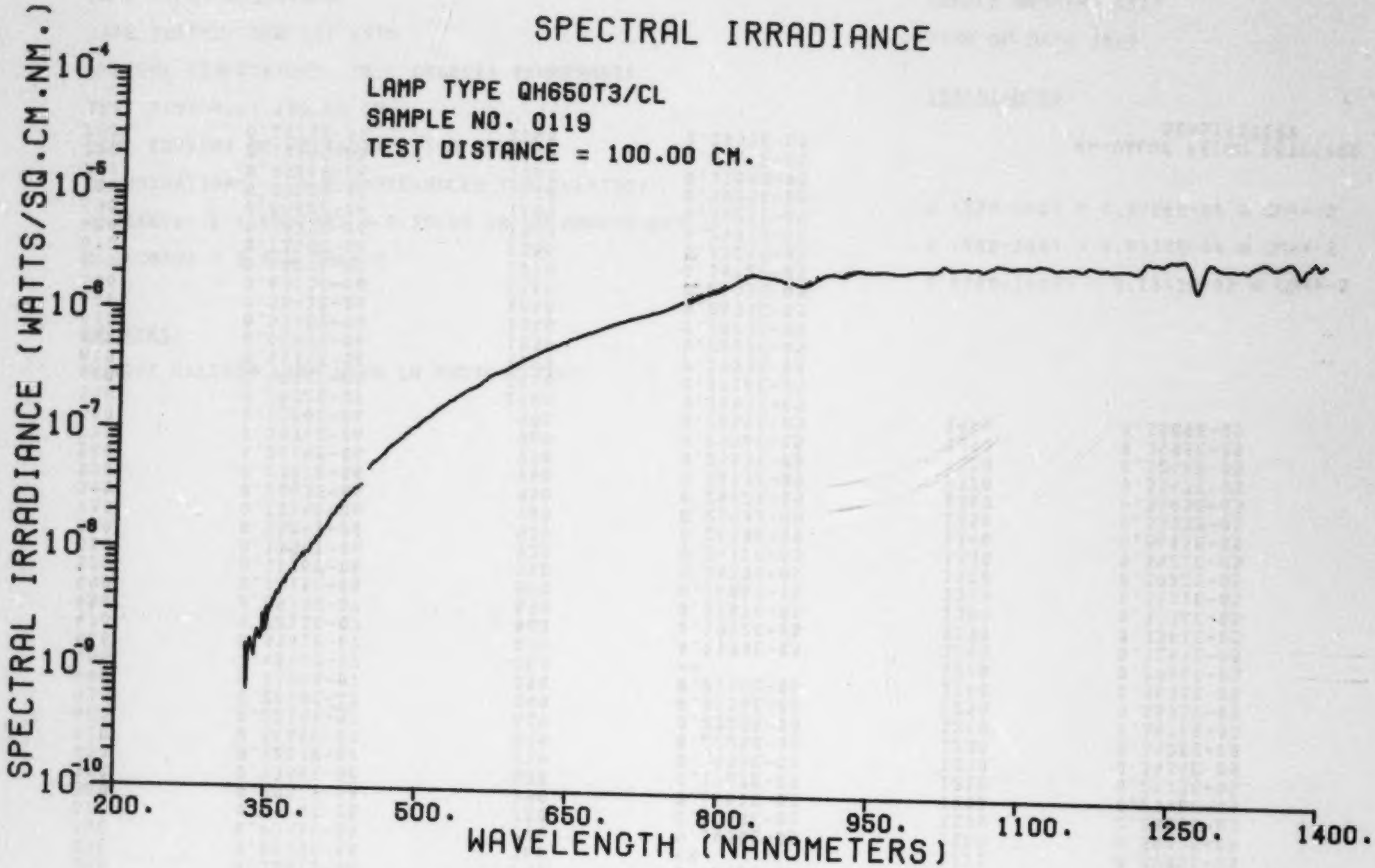
SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE QH650T3/CL

SAMPLE NUMBER 0119
TEST DISTANCE 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
330	0.1658E-08	740	0.1146E-05	1150	0.2975E-05
340	0.1881E-08	750	0.1245E-05	1160	0.3033E-05
350	0.2435E-08	760	**	1170	0.2995E-05
360	0.4341E-08	770	0.1430E-05	1180	0.3002E-05
370	0.5916E-08	780	0.1559E-05	1190	0.2961E-05
380	0.7851E-08	790	0.1661E-05	1200	0.2968E-05
390	0.9396E-08	800	0.1787E-05	1210	0.2875E-05
400	0.1257E-07	810	0.1995E-05	1220	0.3434E-05
410	0.1665E-07	820	0.2225E-05	1230	0.3428E-05
420	0.2214E-07	830	0.2325E-05	1240	0.3476E-05
430	0.2820E-07	840	0.2256E-05	1250	0.3595E-05
440	0.3390E-07	850	0.2195E-05	1260	0.3633E-05
450	0.4890E-07	860	**	1270	0.2066E-05
460	0.5941E-07	870	0.1999E-05	1280	0.3244E-05
470	0.7213E-07	880	0.1952E-05	1290	0.3301E-05
480	0.8519E-07	890	0.2167E-05	1300	0.3136E-05
490	0.1015E-06	900	0.2406E-05	1310	0.3101E-05
500	0.1176E-06	910	0.2429E-05	1320	0.3082E-05
510	0.1350E-06	920	0.2412E-05	1330	0.3422E-05
520	0.1584E-06	930	0.2619E-05	1340	0.3611E-05
530	0.1814E-06	940	0.2590E-05	1350	0.3302E-05
540	0.2063E-06	950	0.2602E-05	1360	0.3605E-05
550	0.2307E-06	960	0.2619E-05	1370	0.3343E-05
560	0.2614E-06	970	0.2563E-05	1380	0.3246E-05
570	0.3034E-06	980	0.2586E-05	1390	0.3695E-05
580	0.3280E-06	990	0.2665E-05	1400	0.3589E-05
590	0.3632E-06	1000	0.2693E-05		
600	0.4038E-06	1010	0.2716E-05		
610	0.4436E-06	1020	0.2929E-05		
620	0.4882E-06	1030	0.2823E-05		
630	0.5348E-06	1040	0.2873E-05		
640	0.5841E-06	1050	0.2893E-05		
650	0.6313E-06	1060	0.2802E-05		
660	0.6827E-06	1070	0.3072E-05		
670	0.7314E-06	1080	0.3024E-05		
680	0.7879E-06	1090	0.2997E-05		
690	0.8462E-06	1100	0.3023E-05		
700	0.9022E-06	1110	0.3085E-05		
710	0.9566E-06	1120	0.3108E-05		
720	0.1014E-05	1130	0.2927E-05		
730	0.1071E-05	1140	0.2939E-05		

**-VALUE BELOW DETECTOR SENSITIVITY

SPECTRAL IRRADIANCE



LAMP TYPE: QH650T3/CL

DATE TESTED: APR 10, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 117.0 VOLTS

ILLUMINATION: 18.7 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.4514E 08 UW CM**-2SR**-1

I (ACGIH) = 0.8978E-09 W CM**-2

TIME (ACGIH) = 0.3341E+07 SECONDS

REMARKS:

QUARTZ HALOGEN LAMP USED IN PHOTOCOPIERS

SAMPLE NUMBER: 0120

TIME OF DAY: 1627

IRRADIANCES:

E (260-320) = 0.9911E-08 W CM**-2

E (320-400) = 0.3622E-06 W CM**-2

E (400-700) = 0.9102E-04 W CM**-2

E (700-1400) = 0.1688E-02 W CM**-2

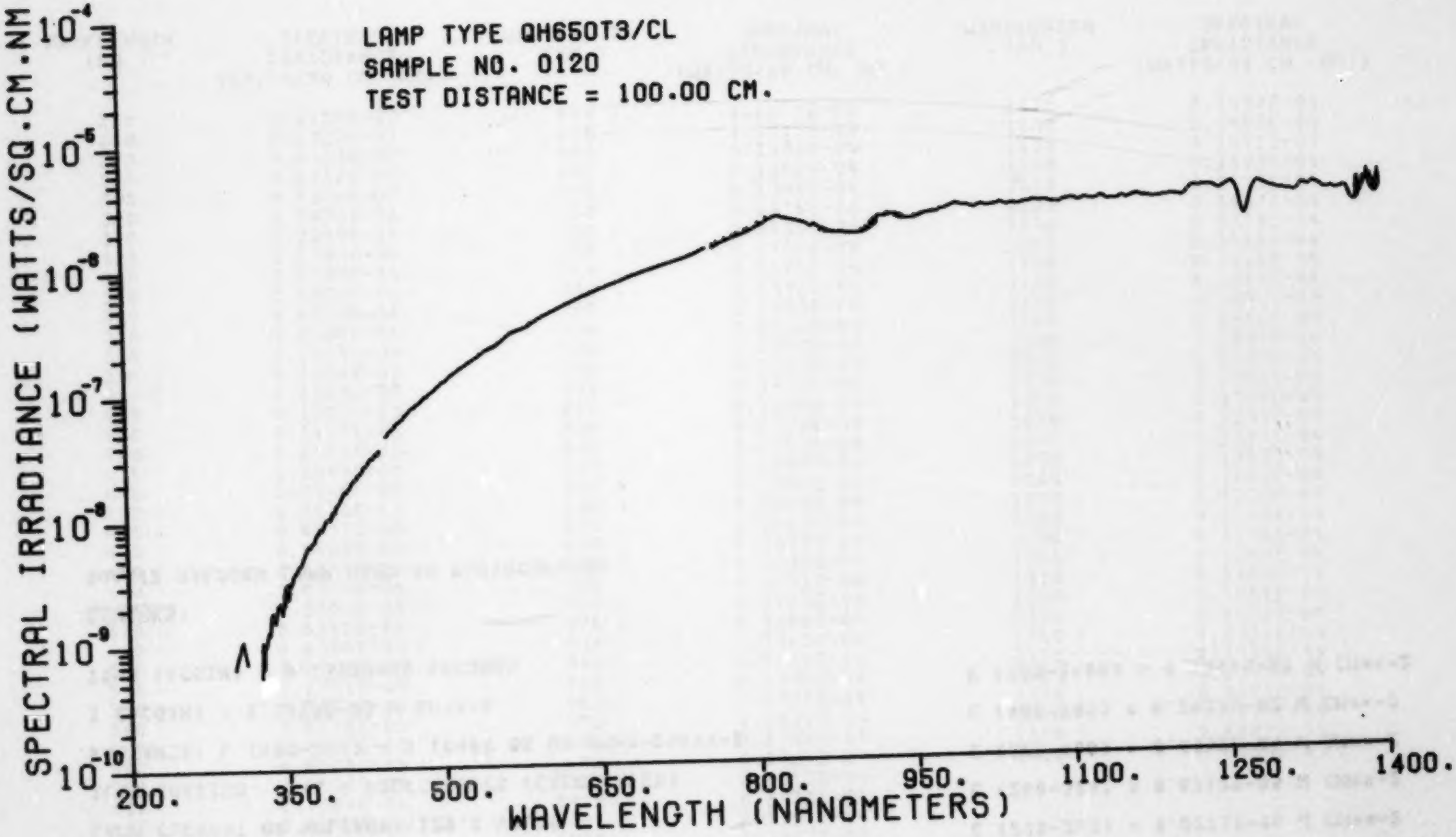
SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE QH650T3/CL

SAMPLE NUMBER 0120
TEST DISTANCE 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
300	0.6232E-09	710	0.9288E-06	1120	0.2802E-05
310	0.9084E-09	720	0.9857E-06	1130	0.2748E-05
320	**	730	0.1045E-05	1140	0.2736E-05
330	0.9895E-09	740	0.1114E-05	1150	0.2725E-05
340	0.1562E-08	750	0.1211E-05	1160	0.2762E-05
350	0.2957E-08	760	**	1170	0.2923E-05
360	0.3804E-08	770	0.1400E-05	1180	0.2808E-05
370	0.5510E-08	780	0.1524E-05	1190	0.2785E-05
380	0.7457E-08	790	0.1641E-05	1200	0.2867E-05
390	0.9908E-08	800	0.1770E-05	1210	0.2805E-05
400	0.1274E-07	810	0.1960E-05	1220	0.3258E-05
410	0.1690E-07	820	0.2183E-05	1230	0.3335E-05
420	0.2181E-07	830	0.2211E-05	1240	0.3366E-05
430	0.2735E-07	840	0.2122E-05	1250	0.3207E-05
440	0.3362E-07	850	0.2025E-05	1260	0.3494E-05
450	0.4749E-07	860	0.1929E-05	1270	0.1983E-05
460	0.5896E-07	870	0.1764E-05	1280	0.3208E-05
470	0.7047E-07	880	0.1661E-05	1290	0.3389E-05
480	0.8327E-07	890	0.1650E-05	1300	0.3148E-05
490	0.9766E-07	900	0.1617E-05	1310	0.2997E-05
500	0.1147E-06	910	0.1678E-05	1320	0.2904E-05
510	0.1339E-06	920	0.2086E-05	1330	0.3257E-05
520	0.1554E-06	930	0.2267E-05	1340	0.3354E-05
530	0.1771E-06	940	0.2228E-05	1350	0.2995E-05
540	0.2029E-06	950	0.2077E-05	1360	0.2960E-05
550	0.2250E-06	960	0.2137E-05	1370	0.2856E-05
560	0.2549E-06	970	0.2281E-05	1380	0.2601E-05
570	0.2957E-06	980	0.2384E-05		
580	0.3184E-06	990	0.2545E-05		
590	0.3541E-06	1000	0.2603E-05		
600	0.3950E-06	1010	0.2518E-05		
610	0.4342E-06	1020	0.2601E-05		
620	0.4793E-06	1030	0.2575E-05		
630	0.5205E-06	1040	0.2649E-05		
640	0.5678E-06	1050	0.2629E-05		
650	0.6131E-06	1060	0.2638E-05		
660	0.6603E-06	1070	0.2746E-05		
670	0.7089E-06	1080	0.2737E-05		
680	0.7671E-06	1090	0.2653E-05		
690	0.8204E-06	1100	0.2748E-05		
700	0.8792E-06	1110	0.2754E-05		

**-VALUE BELOW DETECTOR SENSITIVITY

SPECTRAL IRRADIANCE



LAMP TYPE: Q500T2.5/2CL (500 WATT)

DATE TESTED: JUL 27, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 591.4 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1040E 08 UW CM**-2SR**-1

I (ACGIH) = 0.2253E-05 W CM**-2

TIME (ACGIH) = 0.1332E+04 SECONDS

REMARKS:

QUARTZ HALOGEN LAMP USED IN PHOTOCOPIERS

SAMPLE NUMBER: 0124

TIME OF DAY: 0425

IRRADIANCES:

E (200-260) = 0.2273E-06 W CM**-2

E (260-320) = 0.6712E-05 W CM**-2

E (320-400) = 0.6952E-04 W CM**-2

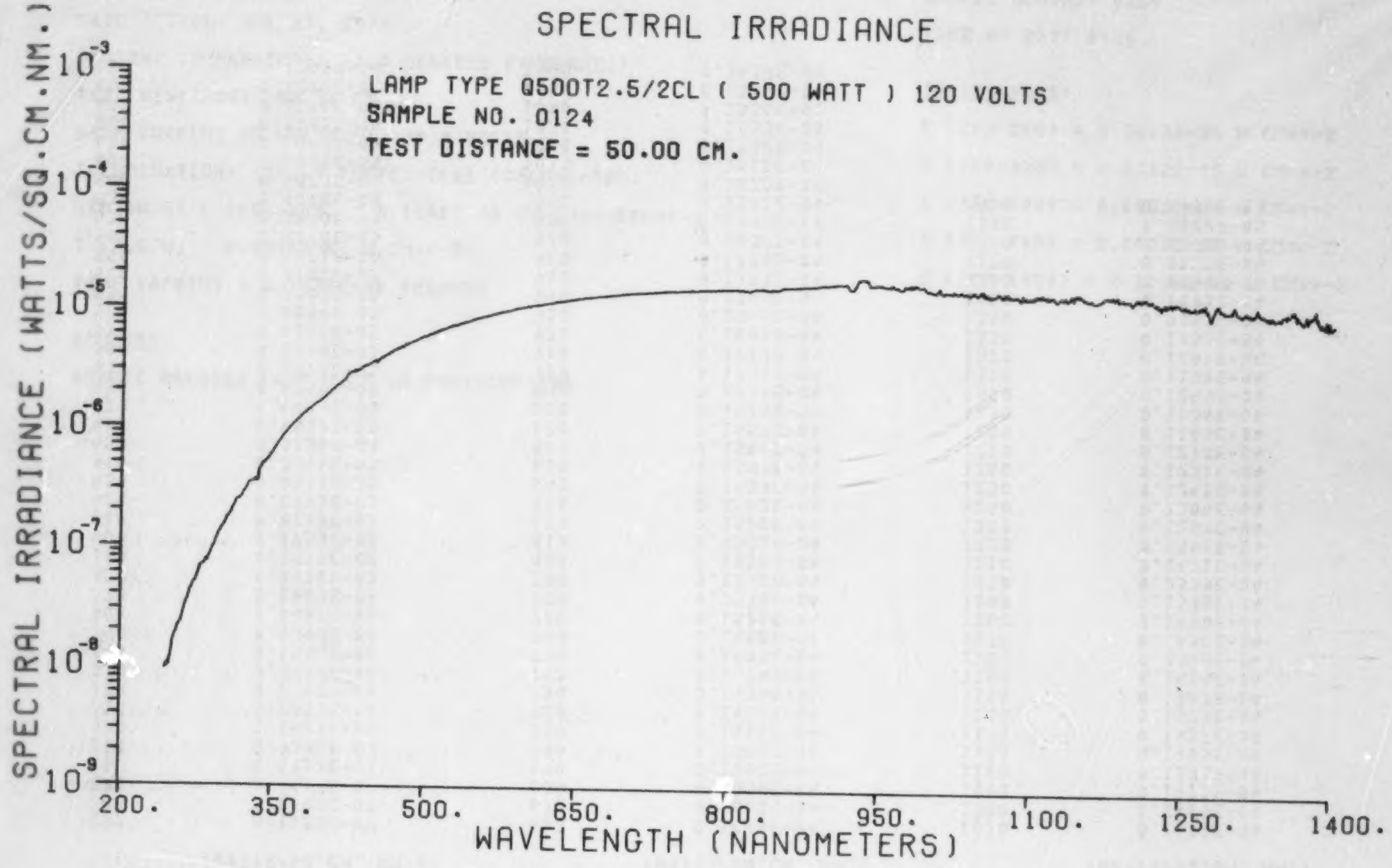
E (400-700) = 0.2437E-02 W CM**-2

E (700-1400) = 0.1006E-01 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE Q500T2.5/2CL (500 WATT)

SAMPLE NUMBER 0124
TEST DISTANCE 50.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
250	0.1185E-07	660	0.1279E-04	1070	0.1437E-04
260	0.2325E-07	670	0.1315E-04	1080	0.1463E-04
270	0.4419E-07	680	0.1336E-04	1090	0.1471E-04
280	0.6912E-07	690	0.1362E-04	1100	0.1393E-04
290	0.9336E-07	700	0.1395E-04	1110	0.1475E-04
300	0.1423E-06	710	0.1416E-04	1120	0.1457E-04
310	0.2059E-06	720	0.1435E-04	1130	0.1379E-04
320	0.2708E-06	730	0.1456E-04	1140	0.1387E-04
330	0.3493E-06	740	0.1474E-04	1150	0.1414E-04
340	0.4954E-06	750	0.1493E-04	1160	0.1340E-04
350	0.6249E-06	760	0.1488E-04	1170	0.1450E-04
360	0.8487E-06	770	0.1526E-04	1180	0.1450E-04
370	0.1069E-05	780	0.1530E-04	1190	0.1395E-04
380	0.1300E-05	790	0.1540E-04	1200	0.1339E-04
390	0.1515E-05	800	0.1554E-04	1210	0.1421E-04
400	0.1753E-05	810	0.1552E-04	1220	0.1306E-04
410	0.2117E-05	820	0.1520E-04	1230	0.1259E-04
420	0.2471E-05	830	0.1582E-04	1240	0.1304E-04
430	0.2895E-05	840	0.1559E-04	1250	0.1245E-04
440	0.3246E-05	850	0.1597E-04	1260	0.1231E-04
450	0.3636E-05	860	0.1644E-04	1270	0.1278E-04
460	0.4037E-05	870	0.1657E-04	1280	0.1148E-04
470	0.4485E-05	880	0.1679E-04	1290	0.1136E-04
480	0.4945E-05	890	0.1736E-04	1300	0.1249E-04
490	0.5378E-05	900	0.1741E-04	1310	0.1100E-04
500	0.5809E-05	910	0.1773E-04	1320	0.1081E-04
510	0.6362E-05	920	0.1608E-04	1330	0.1053E-04
520	0.6884E-05	930	0.1963E-04	1340	0.9951E-05
530	0.7303E-05	940	0.1740E-04	1350	0.1095E-04
540	0.7781E-05	950	0.1753E-04	1360	0.1191E-04
550	0.8371E-05	960	0.1774E-04	1370	0.9825E-05
560	0.8778E-05	970	0.1637E-04	1380	0.1170E-04
570	0.9270E-05	980	0.1757E-04	1390	0.8822E-05
580	0.9678E-05	990	0.1721E-04	1400	0.8980E-05
590	0.1023E-04	1000	0.1572E-04		
600	0.1064E-04	1010	0.1518E-04		
610	0.1093E-04	1020	0.1532E-04		
620	0.1133E-04	1030	0.1553E-04		
630	0.1176E-04	1040	0.1536E-04		
640	0.1212E-04	1050	0.1556E-04		
650	0.1248E-04	1060	0.1437E-04		



SPECTRAL IRRADIANCE
LAMP TYPE Q500T2.5/2CL (500 WATT) 120 VOLTS
SAMPLE NO. 0124
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-3
10^-4
10^-5
10^-6
10^-7
10^-8
10^-9
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: Q500T2.5/2CL (500 WATT)

DATE TESTED: JUL 27, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 616.0 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1108E 08 UW CM**-2SR**-1

I (ACGIH) = 0.2205E-05 W CM**-2

TIME (ACGIH) = 0.1360E+04 SECONDS

REMARKS:

QUARTZ HALOGEN LAMP USED IN PHOTOCOPIERS

SAMPLE NUMBER: 0125

TIME OF DAY: 0610

IRRADIANCES:

E (200-260) = 0.2186E-06 W CM**-2

E (260-320) = 0.6739E-05 W CM**-2

E (320-400) = 0.7279E-04 W CM**-2

E (400-700) = 0.2535E-02 W CM**-2

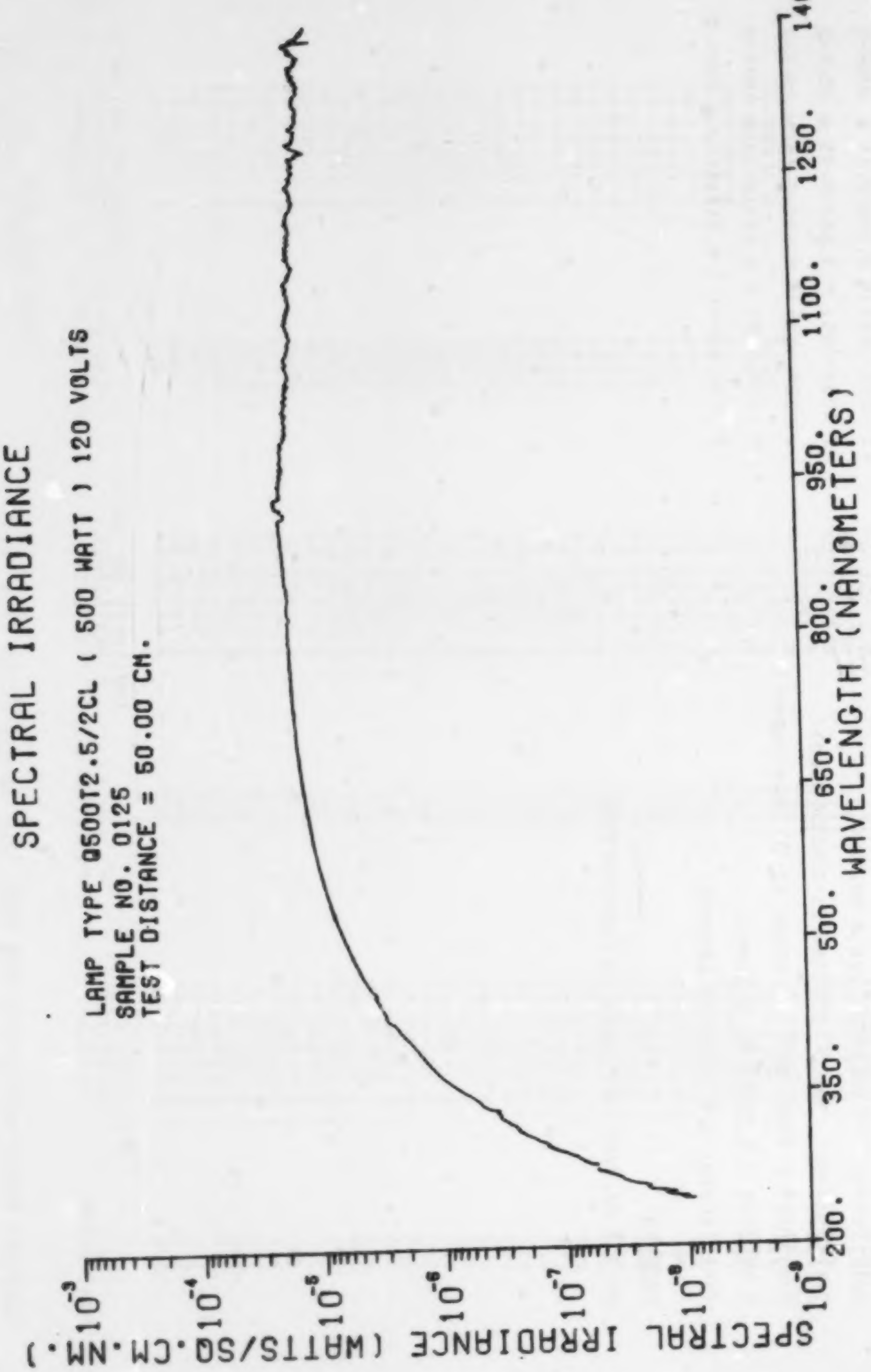
E (700-1400) = 0.1039E-01 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE Q500T2.5/2CL (500 WATT)

SAMPLE NUMBER 0125
TEST DISTANCE 50.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
250	0.1379E-07	660	0.1328E-04	1070	0.1483E-04
260	0.2282E-07	670	0.1363E-04	1080	0.1434E-04
270	0.4171E-07	680	0.1387E-04	1090	0.1422E-04
280	**	690	0.1423E-04	1100	0.1420E-04
290	0.9217E-07	700	0.1454E-04	1110	0.1487E-04
300	0.1428E-06	710	0.1473E-04	1120	0.1427E-04
310	0.2156E-06	720	0.1497E-04	1130	0.1406E-04
320	0.2732E-06	730	0.1518E-04	1140	0.1455E-04
330	0.3589E-06	740	0.1541E-04	1150	0.1454E-04
340	0.5008E-06	750	0.1563E-04	1160	0.1309E-04
350	0.6348E-06	760	0.1563E-04	1170	0.1375E-04
360	0.8619E-06	770	0.1604E-04	1180	0.1417E-04
370	0.1098E-05	780	0.1598E-04	1190	0.1416E-04
380	0.1332E-05	790	0.1612E-04	1200	0.1344E-04
390	0.1558E-05	800	0.1623E-04	1210	0.1401E-04
400	0.1803E-05	810	0.1630E-04	1220	0.1280E-04
410	0.2178E-05	820	0.1596E-04	1230	0.1286E-04
420	0.2539E-05	830	0.1665E-04	1240	0.1313E-04
430	0.2963E-05	840	0.1639E-04	1250	0.1274E-04
440	0.3355E-05	850	0.1672E-04	1260	0.1257E-04
450	0.3525E-05	860	0.1724E-04	1270	0.1315E-04
460	0.4195E-05	870	0.1746E-04	1280	0.1172E-04
470	0.4675E-05	880	0.1766E-04	1290	0.1180E-04
480	0.5170E-05	890	0.1822E-04	1300	0.1269E-04
490	0.5632E-05	900	0.1836E-04	1310	0.1125E-04
500	0.6078E-05	910	0.1871E-04	1320	0.1103E-04
510	0.6677E-05	920	0.1683E-04	1330	0.1147E-04
520	0.7211E-05	930	0.2022E-04	1340	0.1061E-04
530	0.7638E-05	940	0.1823E-04	1350	0.1189E-04
540	0.8153E-05	950	0.1851E-04	1360	0.1247E-04
550	0.8719E-05	960	0.1801E-04	1370	0.1046E-04
560	0.9161E-05	970	0.1755E-04	1380	0.1269E-04
570	0.9678E-05	980	0.1749E-04	1390	0.1004E-04
580	0.1011E-04	990	0.1736E-04	1400	0.9053E-05
590	0.1061E-04	1000	0.1576E-04		
600	0.1105E-04	1010	0.1570E-04		
610	0.1137E-04	1020	0.1572E-04		
620	0.1176E-04	1030	0.1537E-04		
630	0.1222E-04	1040	0.1589E-04		
640	0.1258E-04	1050	0.1545E-04		
650	0.1297E-04	1060	0.1484E-04		

**-VALUE BELOW DETECTOR SENSITIVITY


SPECTRAL IRRADIANCE
LAMP TYPE Q500T2.5/2CL (500 WATT) 120 VOLTS
SAMPLE NO. 0125
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: Q500T2.5/2CL (500 WATT)

DATE TESTED: JUL 27, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 50.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 545.9 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1188E 08 UW CM**-2SR**-1

I (ACGIH) = 0.2195E-05 W CM**-2

TIME (ACGIH) = 0.1367E+04 SECONDS

REMARKS:

QUARTZ HALOGEN LAMP USED IN PHOTOCOPIERS

SAMPLE NUMBER: 0126

TIME OF DAY: 0758

IRRADIANCES:

E (200-260) = 0.2221E-06 W CM**-2

E (260-320) = 0.6621E-05 W CM**-2

E (320-400) = 0.6904E-04 W CM**-2

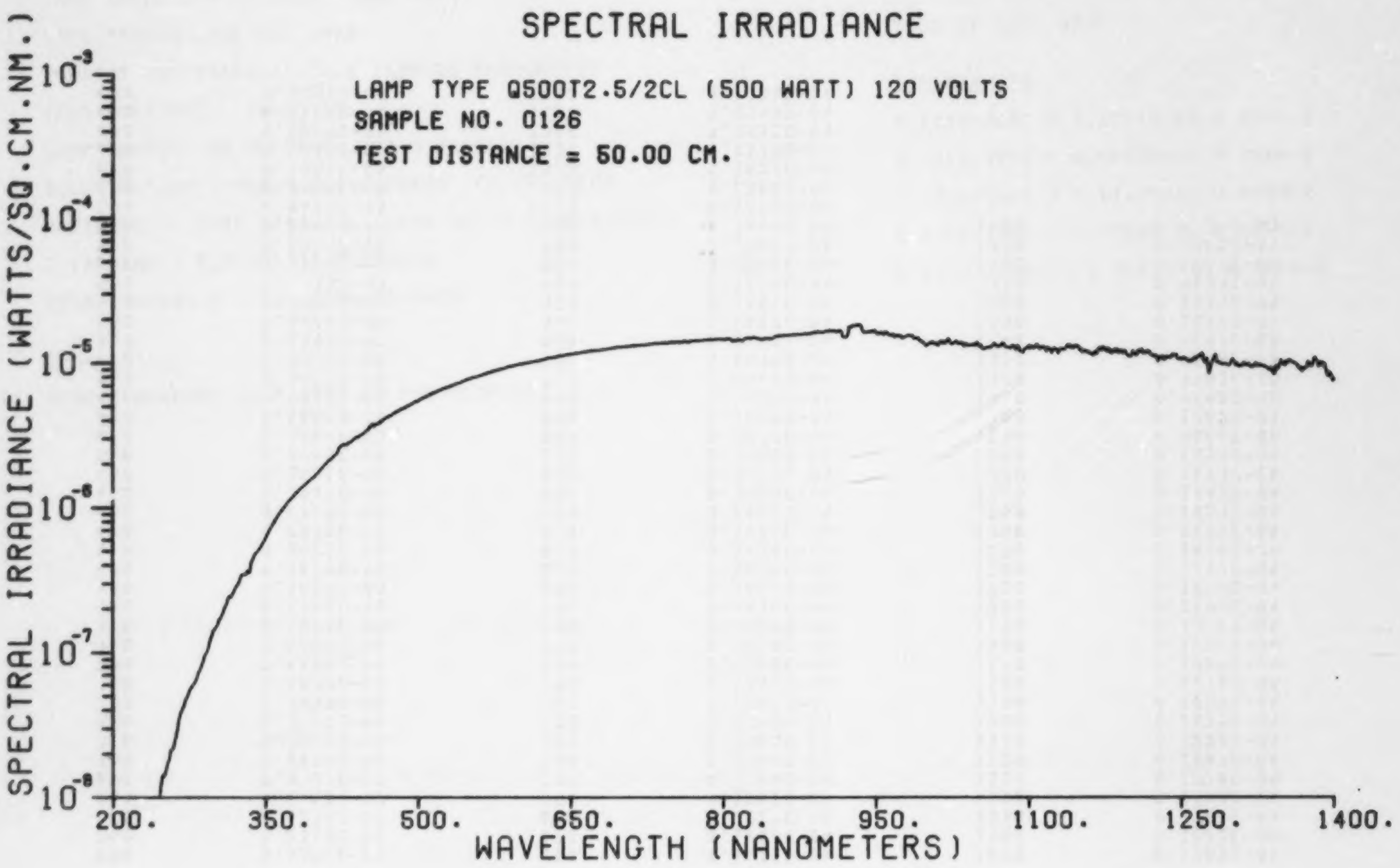
E (400-700) = 0.2252E-02 W CM**-2

E (700-1400) = 0.9101E-02 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE Q500T2.5/2CL (500 WATT)

SAMPLE NUMBER 0126
TEST DISTANCE 50.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
250	0.1397E-07	660	0.1175E-04	1070	0.1285E-04
260	0.2310E-07	670	0.1206E-04	1080	0.1272E-04
270	0.4274E-07	680	0.1227E-04	1090	0.1284E-04
280	0.6160E-07	690	0.1261E-04	1100	0.1303E-04
290	0.9327E-07	700	0.1284E-04	1110	0.1278E-04
300	0.1430E-06	710	0.1304E-04	1120	0.1267E-04
310	0.2044E-06	720	0.1323E-04	1130	0.1222E-04
320	0.2707E-06	730	0.1345E-04	1140	0.1315E-04
330	0.3499E-06	740	0.1363E-04	1150	0.1250E-04
340	0.4802E-06	750	0.1384E-04	1160	0.1176E-04
350	0.6100E-06	760	0.1385E-04	1170	0.1265E-04
360	0.8269E-06	770	0.1416E-04	1180	0.1207E-04
370	0.1041E-05	780	0.1420E-04	1190	0.1211E-04
380	0.1260E-05	790	0.1436E-04	1200	0.1107E-04
390	0.1459E-05	800	0.1443E-04	1210	0.1219E-04
400	0.1679E-05	810	0.1410E-04	1220	0.1147E-04
410	0.2021E-05	820	0.1426E-04	1230	0.1076E-04
420	0.2338E-05	830	0.1486E-04	1240	0.1091E-04
430	0.2709E-05	840	0.1457E-04	1250	0.1059E-04
440	0.3047E-05	850	0.1488E-04	1260	0.1042E-04
450	0.3401E-05	860	0.1542E-04	1270	0.1173E-04
460	0.3790E-05	870	0.1552E-04	1280	0.1009E-04
470	0.4209E-05	880	0.1577E-04	1290	0.9866E-05
480	0.4626E-05	890	0.1627E-04	1300	0.1062E-04
490	0.5032E-05	900	0.1637E-04	1310	0.9848E-05
500	0.5411E-05	910	0.1664E-04	1320	0.9503E-05
510	0.5927E-05	920	0.1495E-04	1330	0.9558E-05
520	0.6397E-05	930	0.1803E-04	1340	0.8640E-05
530	0.6800E-05	940	0.1617E-04	1350	0.1017E-04
540	0.7230E-05	950	0.1656E-04	1360	0.1019E-04
550	0.7733E-05	960	0.1628E-04	1370	0.9099E-05
560	0.8121E-05	970	0.1540E-04	1380	0.1069E-04
570	0.8513E-05	980	0.1521E-04	1390	0.1008E-04
580	0.8940E-05	990	0.1484E-04	1400	0.7754E-05
590	0.9415E-05	1000	0.1320E-04		
600	0.9784E-05	1010	0.1368E-04		
610	0.1005E-04	1020	0.1417E-04		
620	0.1038E-04	1030	0.1377E-04		
630	0.1079E-04	1040	0.1335E-04		
640	0.1112E-04	1050	0.1349E-04		
650	0.1147E-04	1060	0.1284E-04		


SPECTRAL IRRADIANCE
LAMP TYPE Q500T2.5/2CL (500 WATT) 120 VOLTS
SAMPLE NO. 0126
TEST DISTANCE = 50.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-3
10^-4
10^-5
10^-6
10^-7
10^-8
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: QH1500T3/1CL (1500 WATT)

DATE TESTED: JUL 19, 1978

AMBIENT TEMPERATURE: 76.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 170.0 VOLTS

ILLUMINATION: 113.1 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.5265E 06 UW CM**-2SR**-1

I (ACGIH) = 0.0 W CM**-2

REMARKS:

QUARTZ HALOGEN LAMP USED IN PHOTOCOPIERS

SAMPLE NUMBER: 0127

TIME OF DAY: 415

IRRADIANCES:

E (320-400) = 0.3491E-05 W CM**-2

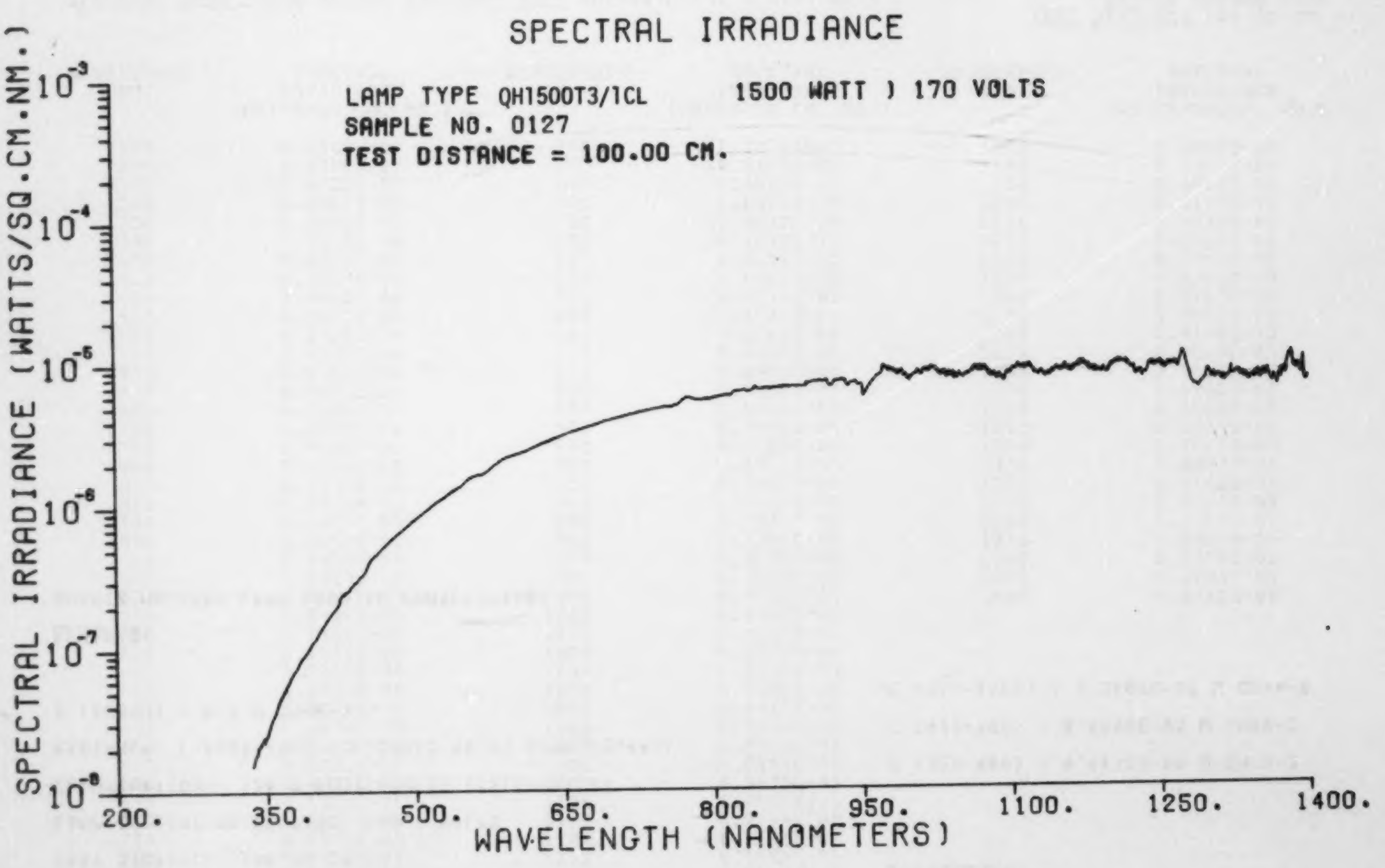
E (400-700) = 0.5050E-03 W CM**-2

E (700-1400) = 0.5101E-02 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE QH1500T3/ICL (1500 WATTS)

SAMPLE NUMBER 0127
TEST DISTANCE 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
340	0.1873E-07	750	0.4852E-05	1160	0.8553E-05
350	0.2471E-07	760	0.4890E-05	1170	0.8789E-05
360	0.3832E-07	770	0.5419E-05	1180	0.8535E-05
370	0.5472E-07	780	0.5549E-05	1190	0.8343E-05
380	0.7306E-07	790	0.5438E-05	1200	0.8517E-05
390	0.9485E-07	800	0.5563E-05	1210	0.9278E-05
400	0.1188E-06	810	0.5771E-05	1220	0.8964E-05
410	0.1545E-06	820	0.5852E-05	1230	0.8083E-05
420	0.1929E-06	830	0.6265E-05	1240	0.8987E-05
430	0.2518E-06	840	0.6257E-05	1250	0.9211E-05
440	0.2958E-06	850	0.6406E-05	1260	0.9198E-05
450	0.3510E-06	860	0.6515E-05	1270	0.8717E-05
460	0.4560E-06	870	0.6576E-05	1280	0.8179E-05
470	0.5315E-06	880	0.6618E-05	1290	0.6207E-05
480	0.6214E-06	890	0.6598E-05	1300	0.8235E-05
490	0.7125E-06	900	0.7120E-05	1310	0.7475E-05
500	0.8056E-06	910	0.7269E-05	1320	0.7211E-05
510	0.9238E-06	920	0.6719E-05	1330	0.7955E-05
520	0.1049E-05	930	0.7425E-05	1340	0.6966E-05
530	0.1171E-05	940	0.7007E-05	1350	0.7972E-05
540	0.1308E-05	950	0.6903E-05	1360	0.8219E-05
550	0.1468E-05	960	0.6902E-05	1370	0.6453E-05
560	0.1638E-05	970	0.8028E-05	1380	0.9272E-05
570	0.1715E-05	980	0.8740E-05	1390	0.8640E-05
580	0.1934E-05	990	0.8305E-05	1400	0.7151E-05
590	0.2180E-05	1000	0.7513E-05		
600	0.2296E-05	1010	0.7950E-05		
610	0.2423E-05	1020	0.8790E-05		
620	0.2539E-05	1030	0.7926E-05		
630	0.2789E-05	1040	0.7836E-05		
640	0.2971E-05	1050	0.7959E-05		
650	0.3162E-05	1060	0.8165E-05		
660	0.3345E-05	1070	0.8404E-05		
670	0.3520E-05	1080	0.8153E-05		
680	0.3687E-05	1090	0.7837E-05		
690	0.3877E-05	1100	0.8106E-05		
700	0.4067E-05	1110	0.8974E-05		
710	0.4228E-05	1120	0.9168E-05		
720	0.4383E-05	1130	0.8050E-05		
730	0.4560E-05	1140	0.7647E-05		
740	0.4701E-05	1150	0.8528E-05		


SPECTRAL IRRADIANCE
LAMP TYPE QH1500T3/1CL 1500 WATT) 170 VOLTS
SAMPLE NO. 0127
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-3
10^-4
10^-5
10^-6
10^-7
10^-8
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: QH1500T3/1CL (1500 WATT)

DATE TESTED: JUL 19, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 170.0 VOLTS

ILLUMINATION: 126.2 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.5756E 06 UW CM**-2SR**-1

I (ACGIH) = 0.0 W CM**-2

SAMPLE NUMBER: 0128

TIME OF DAY: 558

IRRADIANCES:

E (320-400) = 0.4158E-05 W CM**-2

E (400-700) = 0.5598E-03 W CM**-2

E (700-1400) = 0.5667E-02 W CM**-2

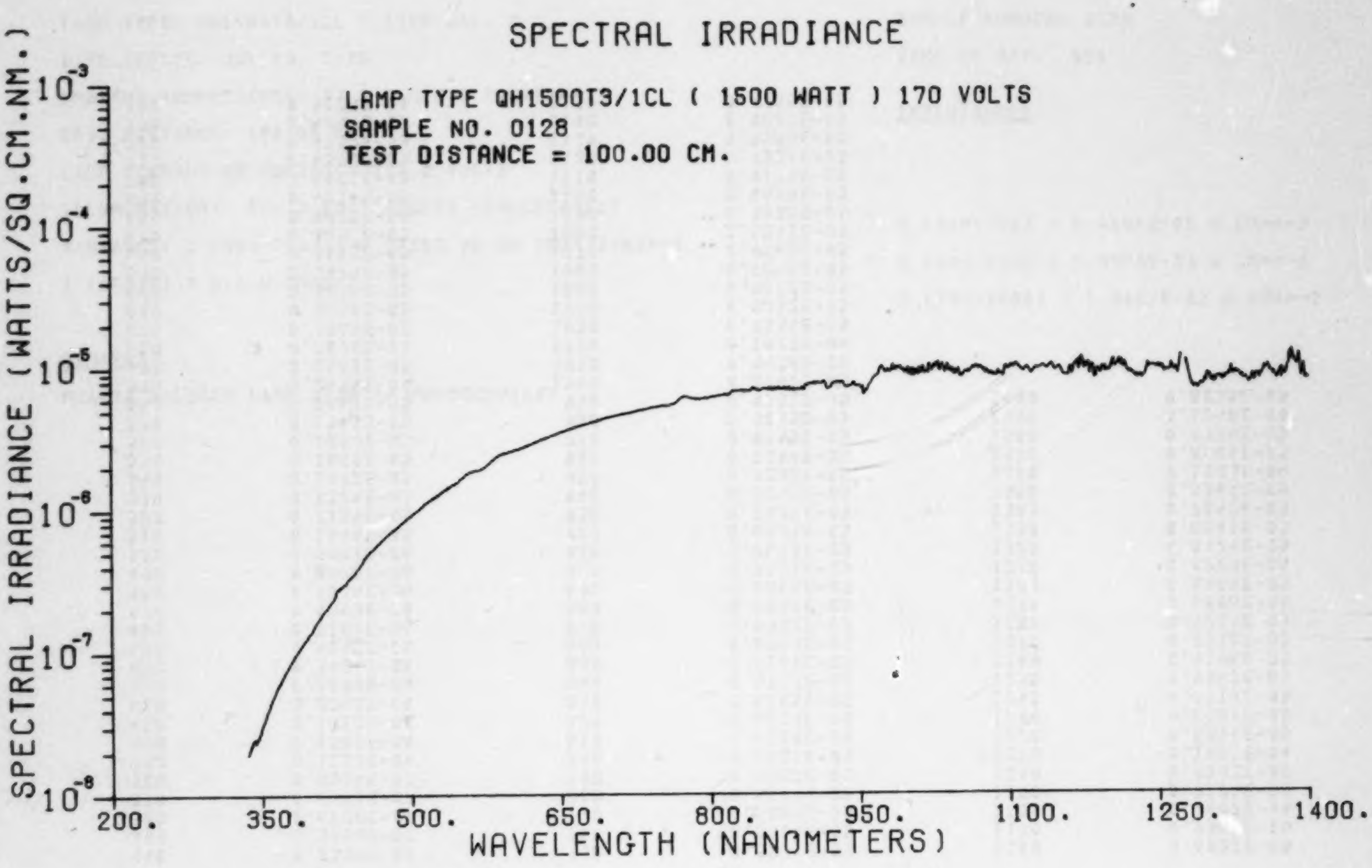
REMARKS:

QUARTZ HALOGEN LAMP USED IN PHOTOCOPIERS

<u>SPECTRAL</u> <u>IRRADIANCE</u> <u>VALUES</u> <u>FOR</u> <u>LAMP</u> <u>TYPE</u> QH1500T3/1CL (1500 WATT)

<u>SAMPLE</u> <u>NUMBER</u> 0128
<u>TEST</u> <u>DISTANCE</u> 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
340	0.2308E-07	750	0.5271E-05	1160	0.8807E-05
350	0.3056E-07	760	0.5314E-05	1170	0.9357E-05
360	0.4722E-07	770	0.5884E-05	1180	0.1007E-04
370	0.6561E-07	780	0.6029E-05	1190	0.9104E-05
380	0.8804E-07	790	0.5832E-05	1200	0.9233E-05
390	0.1120E-06	800	0.6031E-05	1210	0.1085E-04
400	0.1385E-06	810	0.6210E-05	1220	0.8944E-05
410	0.1813E-06	820	0.6283E-05	1230	0.8351E-05
420	0.2268E-06	830	0.6745E-05	1240	0.9718E-05
430	0.2890E-06	840	0.6717E-05	1250	0.9947E-05
440	0.3421E-06	850	0.6761E-05	1260	0.9196E-05
450	0.4192E-06	860	0.6989E-05	1270	0.9218E-05
460	0.5187E-06	870	0.6992E-05	1280	0.9259E-05
470	0.6055E-06	880	0.7032E-05	1290	0.6858E-05
480	0.7034E-06	890	0.6866E-05	1300	0.8480E-05
490	0.8078E-06	900	0.7451E-05	1310	0.8229E-05
500	0.9081E-06	910	0.7603E-05	1320	0.8474E-05
510	0.1044E-05	920	0.6951E-05	1330	0.8841E-05
520	0.1184E-05	930	0.7627E-05	1340	0.7842E-05
530	0.1324E-05	940	0.7145E-05	1350	0.8564E-05
540	0.1472E-05	950	0.7238E-05	1360	0.1003E-04
550	0.1650E-05	960	0.7344E-05	1370	0.8506E-05
560	0.1850E-05	970	0.9195E-05	1380	0.9954E-05
570	0.1910E-05	980	0.9235E-05	1390	0.1040E-04
580	0.2167E-05	990	0.9731E-05	1400	0.8038E-05
590	0.2434E-05	1000	0.8742E-05		
600	0.2561E-05	1010	0.9438E-05		
610	0.2696E-05	1020	0.1022E-04		
620	0.2860E-05	1030	0.9538E-05		
630	0.3036E-05	1040	0.9252E-05		
640	0.3274E-05	1050	0.9032E-05		
650	0.3474E-05	1060	0.9249E-05		
660	0.3660E-05	1070	0.9565E-05		
670	0.3852E-05	1080	0.8841E-05		
680	0.4025E-05	1090	0.9038E-05		
690	0.4214E-05	1100	0.9450E-05		
700	0.4421E-05	1110	0.9779E-05		
710	0.4592E-05	1120	0.9331E-05		
720	0.4752E-05	1130	0.9580E-05		
730	0.4944E-05	1140	0.9827E-05		
740	0.5123E-05	1150	0.9789E-05		


SPECTRAL IRRADIANCE
LAMP TYPE QH1500T3/1CL (1500 WATT) 170 VOLTS
SAMPLE NO. 0128
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: QH1500T3/1CL (1500 WATT)

SAMPLE NUMBER: 0129

DATE TESTED: JUL 19, 1978

TIME OF DAY: 741

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 170.0 VOLTS

ILLUMINATION: 113.3 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.5928E 06 UW CM**-2SR**-1

I (ACGIH) = 0.0 W CM**-2

IRRADIANCES:

E (320-400) = 0.3292E-05 W CM**-2

E (400-700) = 0.5084E-03 W CM**-2

E (700-1400) = 0.4899E-02 W CM**-2

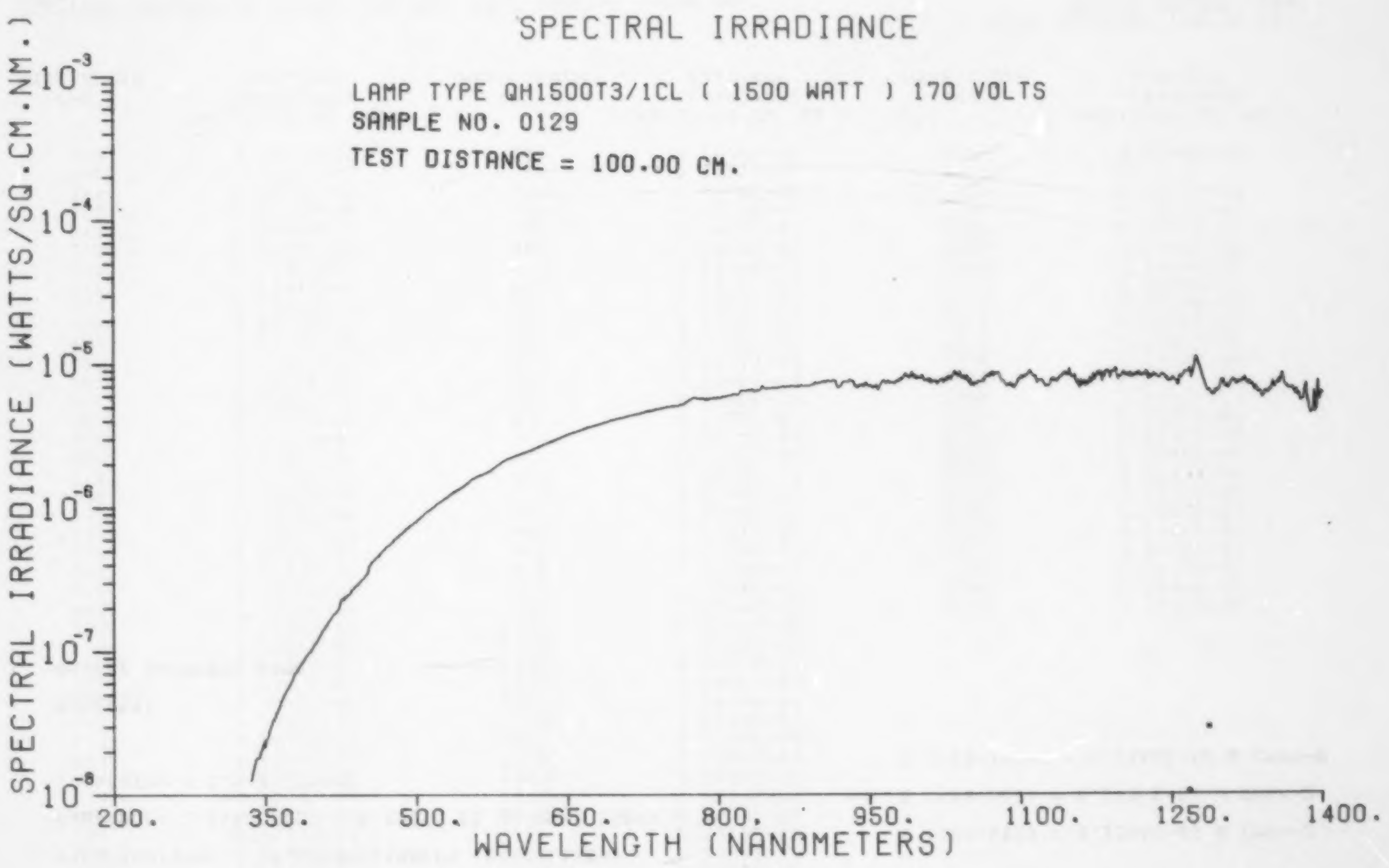
REMARKS:

QUARTZ HALOGEN LAMP USED IN PHOTOCOPIERS

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE QH1500T3/1CL (1500 WATT)

SAMPLE NUMBER 0129
TEST DISTANCE 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
340	0.1688E-07	750	0.4979E-05	1160	0.7393E-05
350	0.2230E-07	760	0.5039E-05	1170	0.7339E-05
360	0.3532E-07	770	0.5492E-05	1180	0.8494E-05
370	0.5170E-07	780	0.5668E-05	1190	0.8731E-05
380	0.7110E-07	790	0.5644E-05	1200	0.8212E-05
390	0.9103E-07	800	0.5774E-05	1210	0.8027E-05
400	0.1142E-06	810	0.5949E-05	1220	0.8298E-05
410	0.1495E-06	820	0.6007E-05	1230	0.8300E-05
420	0.1865E-06	830	0.6499E-05	1240	0.8361E-05
430	0.2396E-06	840	0.6467E-05	1250	0.7704E-05
440	0.2849E-06	850	0.6659E-05	1260	0.7965E-05
450	0.3397E-06	860	0.6762E-05	1270	0.8193E-05
460	0.4472E-06	870	0.6846E-05	1280	0.8369E-05
470	0.5271E-06	880	0.6905E-05	1290	0.6031E-05
480	0.6104E-06	890	0.6947E-05	1300	0.7635E-05
490	0.7126E-06	900	0.7280E-05	1310	0.7550E-05
500	0.7947E-06	910	0.7479E-05	1320	0.7414E-05
510	0.9239E-06	920	0.6825E-05	1330	0.7144E-05
520	0.1046E-05	930	0.7567E-05	1340	0.5773E-05
530	0.1172E-05	940	0.6981E-05	1350	0.6956E-05
540	0.1313E-05	950	0.6845E-05	1360	0.8515E-05
550	0.1464E-05	960	0.6964E-05	1370	0.6667E-05
560	0.1636E-05	970	0.7311E-05	1380	0.5629E-05
570	0.1747E-05	980	0.7829E-05	1390	0.4636E-05
580	0.1941E-05	990	0.8128E-05	1400	0.6196E-05
590	0.2156E-05	1000	0.7891E-05		
600	0.2303E-05	1010	0.7547E-05		
610	0.2457E-05	1020	0.7670E-05		
620	0.2616E-05	1030	0.7703E-05		
630	0.2819E-05	1040	0.8267E-05		
640	0.3000E-05	1050	0.7245E-05		
650	0.3204E-05	1060	0.7367E-05		
660	0.3384E-05	1070	0.8312E-05		
670	0.3582E-05	1080	0.7755E-05		
680	0.3753E-05	1090	0.7167E-05		
690	0.3929E-05	1100	0.8086E-05		
700	0.4151E-05	1110	0.8507E-05		
710	0.4318E-05	1120	0.7621E-05		
720	0.4472E-05	1130	0.7602E-05		
730	0.4677E-05	1140	0.8062E-05		
740	0.4845E-05	1150	0.8052E-05		


SPECTRAL IRRADIANCE
LAMP TYPE QH1500T3/1CL (1500 WATT) 170 VOLTS
SAMPLE NO. 0129
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-3
10^-4
10^-5
10^-6
10^-7
10^-8
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: 500T3/7 (500 WATT)

DATE TESTED: JUL 18, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHE

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 39.3 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.8209E 05 UW CM**-2SR**

I (ACGIH) = 0.0 W CM**-2

REMARKS:

QUARTZ INFRARED LAMP

SAMPLE NUMBER: 0289

TIME OF DAY: 1133

IRRADIANCES:

E (320-400) = 0.1366E-05 W CM**-2

E (400-700) = 0.1754E-03 W CM**-2

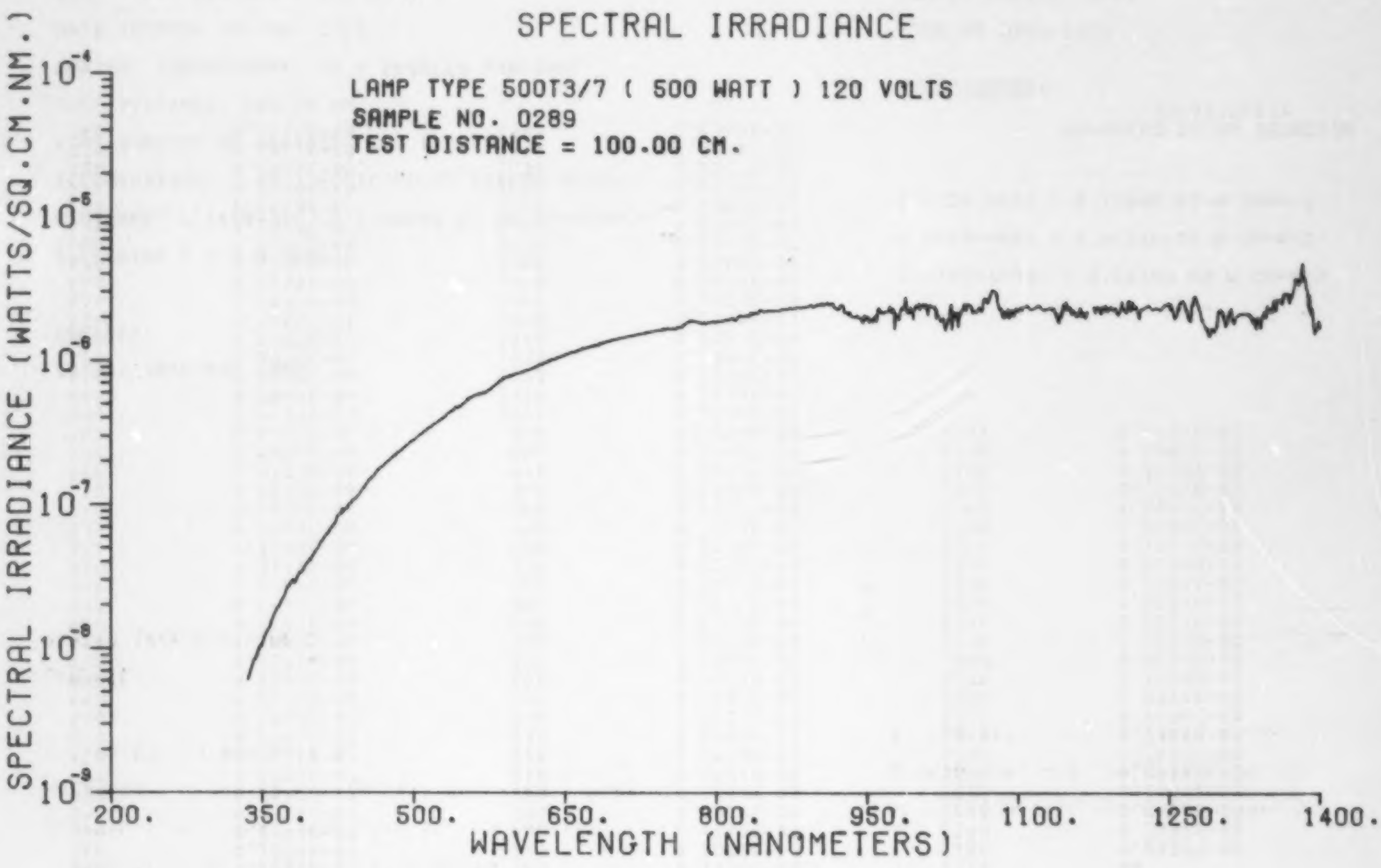
E (700-1400) = 0.1365E-02 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE 500T3/7 (500 WATT)

SAMPLE NUMBER 0289
TEST DISTANCE 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
340	0.7593E-08	750	0.1660E-05	1160	0.2108E-05
350	0.1089E-07	760	0.1656E-05	1170	**
360	0.1574E-07	770	0.1822E-05	1180	0.2332E-05
370	0.2190E-07	780	0.1862E-05	1190	0.2292E-05
380	0.2935E-07	790	0.1817E-05	1200	0.2156E-05
390	0.3472E-07	800	0.1860E-05	1210	0.2644E-05
400	0.4393E-07	810	0.1921E-05	1220	0.2016E-05
410	0.5661E-07	820	0.1918E-05	1230	0.2439E-05
420	0.7061E-07	830	0.2051E-05	1240	0.2302E-05
430	0.8803E-07	840	0.2137E-05	1250	0.2498E-05
440	0.1076E-06	850	0.2187E-05	1260	0.2320E-05
450	0.1301E-06	860	0.2229E-05	1270	0.1938E-05
460	0.1571E-06	870	0.2268E-05	1280	0.2253E-05
470	0.1848E-06	880	0.2332E-05	1290	0.1503E-05
480	0.2162E-06	890	0.2379E-05	1300	0.2253E-05
490	0.2460E-06	900	0.2441E-05	1310	0.2132E-05
500	0.2787E-06	910	0.2532E-05	1320	0.2145E-05
510	0.3179E-06	920	0.2282E-05	1330	0.2139E-05
520	0.3600E-06	930	0.2175E-05	1340	0.1817E-05
530	0.4053E-06	940	0.2072E-05	1350	0.2284E-05
540	0.4576E-06	950	0.1941E-05	1360	0.2686E-05
550	0.5095E-06	960	0.2104E-05	1370	0.2572E-05
560	0.5723E-06	970	0.2219E-05	1380	0.3655E-05
570	0.5966E-06	980	0.2092E-05	1390	0.2696E-05
580	0.6678E-06	990	0.2214E-05	1400	0.1717E-05
590	0.7604E-06	1000	0.2346E-05		
600	0.7964E-06	1010	0.2116E-05		
610	0.8460E-06	1020	0.2094E-05		
620	0.8998E-06	1030	0.1956E-05		
630	0.9702E-06	1040	0.1867E-05		
640	0.1035E-05	1050	0.2505E-05		
650	0.1097E-05	1060	0.2288E-05		
660	0.1150E-05	1070	0.2577E-05		
670	0.1221E-05	1080	0.2468E-05		
680	0.1274E-05	1090	0.2203E-05		
690	0.1339E-05	1100	0.2229E-05		
700	0.1410E-05	1110	0.2383E-05		
710	0.1459E-05	1120	0.2439E-05		
720	0.1512E-05	1130	0.2327E-05		
730	0.1561E-05	1140	0.1870E-05		
740	0.1610E-05	1150	0.2369E-05		

**-VALUE BELOW DETECTOR SENSITIVITY


SPECTRAL IRRADIANCE
LAMP TYPE 500T3/7 (500 WATT) 120 VOLTS
SAMPLE NO. 0289
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: 500T3/7 (500 WATT)

DATE TESTED: JUL 18, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 49.8 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1547E 06 UW CM**-2SR**-1

I (ACGIH) = 0.0 W CM**-2

REMARKS:

QUARTZ INFRARED LAMP

SAMPLE NUMBER: 0290

TIME OF DAY: 1312

IRRADIANCES:

E (320-400) = 0.1741E-05 W CM**-2

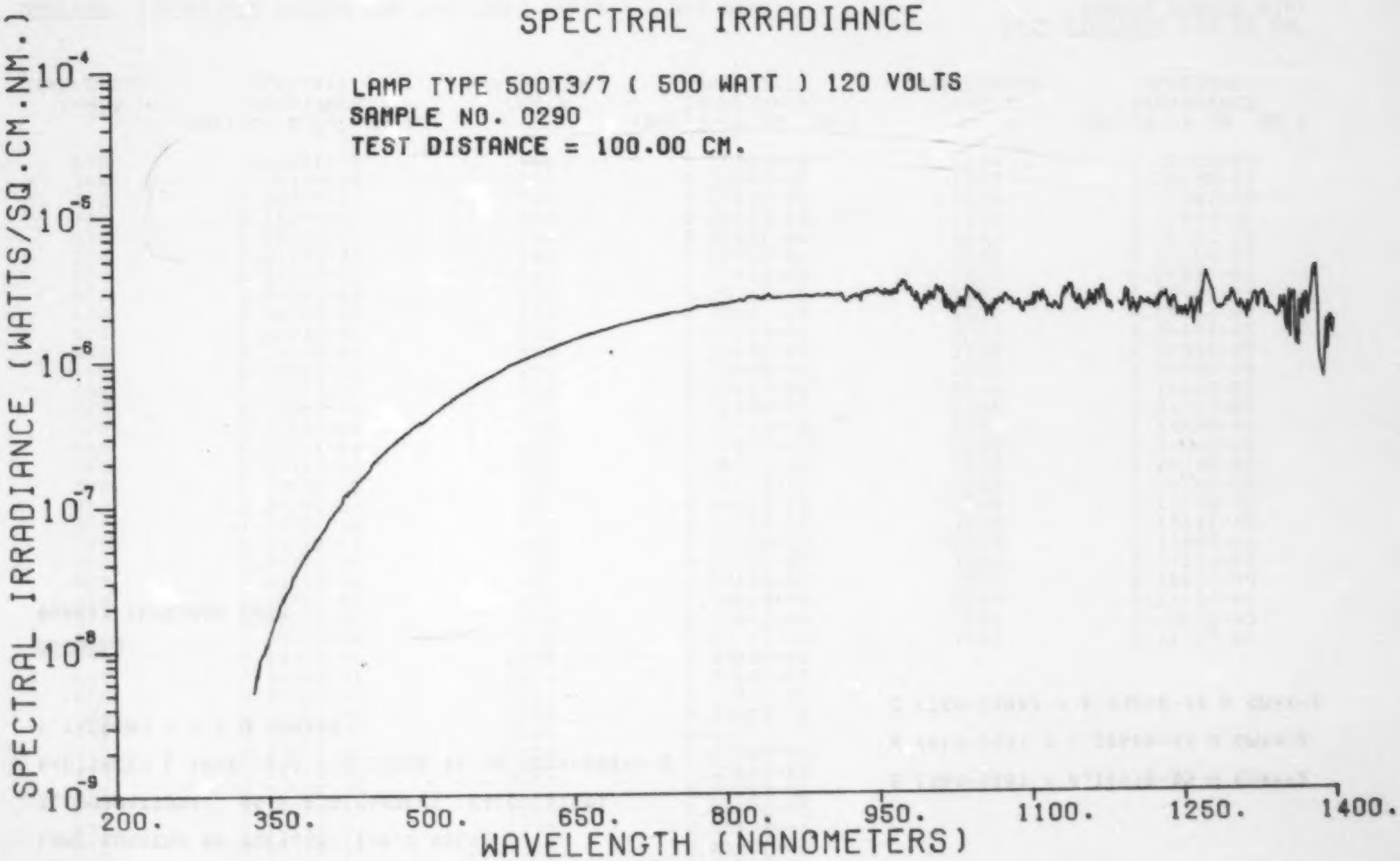
E (400-700) = 0.2222E-03 W CM**-2

E (700-1400) = 0.1662E-02 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE 500T3/7 (500 WATT)

SAMPLE NUMBER 0290
TEST DISTANCE 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
340	0.7716E-08	750	0.2103E-05	1160	0.2368E-05
350	0.1200E-07	760	0.2136E-05	1170	0.2858E-05
360	0.1905E-07	770	0.2249E-05	1180	0.2260E-05
370	0.2659E-07	780	0.2314E-05	1190	0.2277E-05
380	0.3744E-07	790	0.2351E-05	1200	0.2045E-05
390	0.4834E-07	800	0.2415E-05	1210	0.2498E-05
400	0.6136E-07	810	0.2481E-05	1220	0.2302E-05
410	0.7923E-07	820	0.2505E-05	1230	0.2601E-05
420	0.9873E-07	830	0.2657E-05	1240	0.2335E-05
430	0.1226E-06	840	0.2650E-05	1250	0.1900E-05
440	0.1493E-06	850	0.2617E-05	1260	0.2260E-05
450	0.1762E-06	860	0.2640E-05	1270	0.2540E-05
460	0.2184E-06	870	0.2667E-05	1280	0.2803E-05
470	0.2543E-06	880	0.2713E-05	1290	0.2145E-05
480	0.2926E-06	890	0.2683E-05	1300	0.2780E-05
490	0.3301E-06	900	0.2740E-05	1310	0.2256E-05
500	0.3716E-06	910	0.2719E-05	1320	0.2436E-05
510	0.4145E-06	920	0.2436E-05	1330	0.2672E-05
520	0.4677E-06	930	0.2715E-05	1340	0.2028E-05
530	0.5231E-06	940	0.2853E-05	1350	0.2085E-05
540	0.5849E-06	950	0.2989E-05	1360	0.2659E-05
550	0.6478E-06	960	0.2841E-05	1370	0.2477E-05
560	0.7119E-06	970	0.2806E-05	1380	0.3864E-05
570	0.7718E-06	980	0.2905E-05	1390	0.7751E-06
580	0.8459E-06	990	0.2707E-05	1400	0.1757E-05
590	0.9299E-06	1000	0.2584E-05		
600	0.9995E-06	1010	0.2968E-05		
610	0.1066E-05	1020	0.2460E-05		
620	0.1134E-05	1030	0.2326E-05		
630	0.1219E-05	1040	0.2925E-05		
640	0.1296E-05	1050	0.2674E-05		
650	0.1368E-05	1060	0.2195E-05		
660	0.1449E-05	1070	0.2408E-05		
670	0.1526E-05	1080	0.2458E-05		
680	0.1599E-05	1090	0.2371E-05		
690	0.1674E-05	1100	0.2264E-05		
700	0.1759E-05	1110	0.2645E-05		
710	0.1823E-05	1120	0.2249E-05		
720	0.1888E-05	1130	0.2098E-05		
730	0.1962E-05	1140	0.2971E-05		
740	0.2028E-05	1150	0.2484E-05		


SPECTRAL IRRADIANCE
LAMP TYPE 500T3/7 (500 WATT) 120 VOLTS
SAMPLE NO. 0290
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-4
10^-5
10^-6
10^-7
10^-8
10^-9
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: 500T3/7 (500 WATT)

DATE TESTED: JUL 18, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 46.6 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1725E 06 UW CM**-2SR**-1

I (ACGIH) = 0.0 W CM**-2

REMARKS:

QUARTZ INFRARED LAMP

SAMPLE NUMBER: 0291

TIME OF DAY: 1501

IRRADIANCES:

E (320-400) = 0.1603E-05 W CM**-2

E (400-700) = 0.2060E-03 W CM**-2

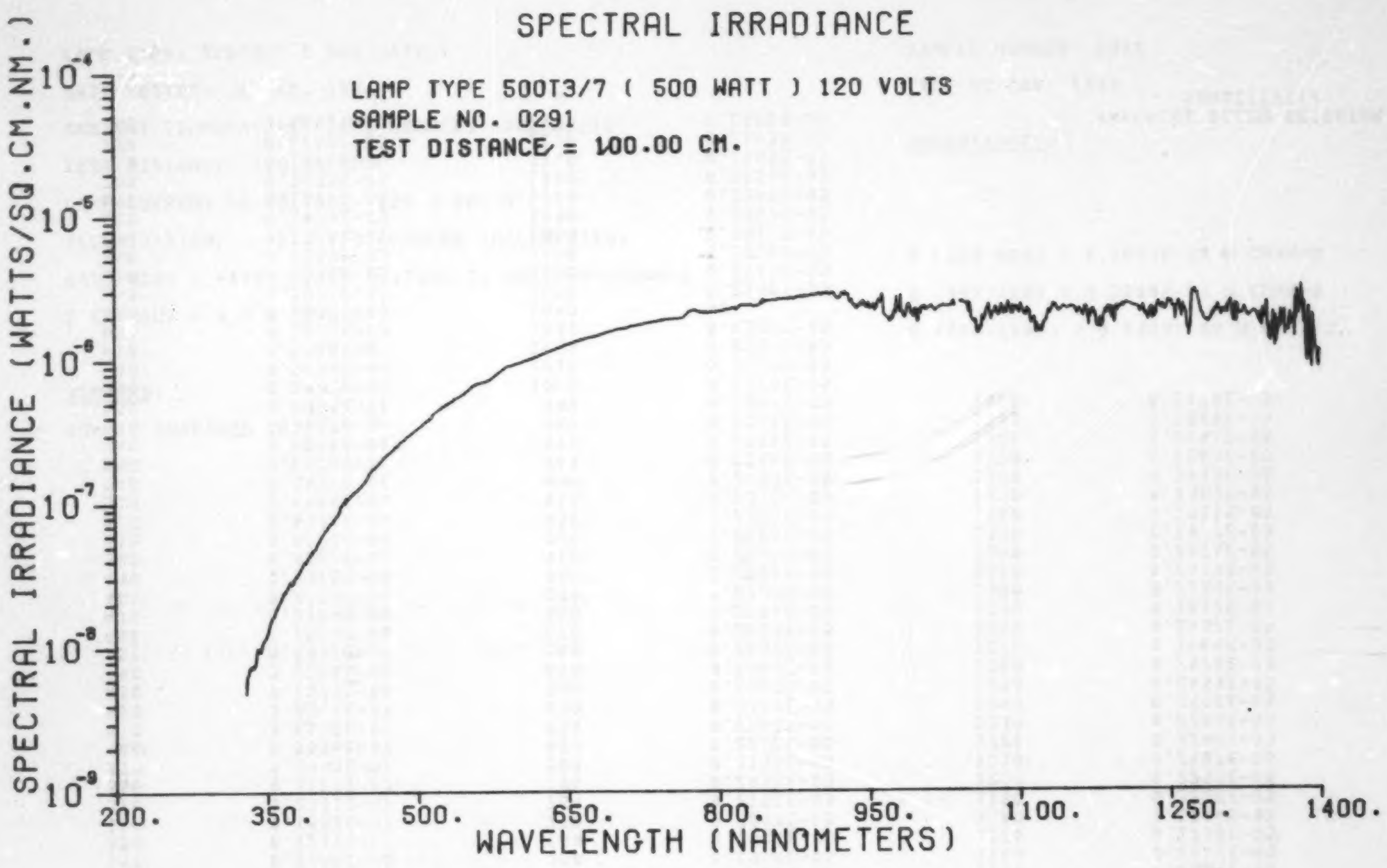
E (700-1400) = 0.1385E-02 W CM**-2

SPECTRAL IRRADIANCE VALUES FOR LAMP TYPE 500T3/7 (500 WATT)

SAMPLE NUMBER 0291
TEST DISTANCE 100.00 CM.

WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)	WAVELENGTH (NM.)	SPECTRAL IRRADIANCE (WATTS/SQ.CM. NM.)
330	0.6035E-08	740	0.1850E-05	1150	0.2251E-05
340	0.9044E-08	750	0.1904E-05	1160	0.2212E-05
350	0.1215E-07	760	0.1911E-05	1170	0.1738E-05
360	0.1852E-07	770	0.2097E-05	1180	0.1744E-05
370	0.2531E-07	780	0.2151E-05	1190	0.2222E-05
380	0.3139E-07	790	0.2098E-05	1200	0.2295E-05
390	0.3990E-07	800	0.2146E-05	1210	0.2407E-05
400	0.5036E-07	810	0.2218E-05	1220	0.2244E-05
410	0.6638E-07	820	0.2243E-05	1230	0.2083E-05
420	0.8241E-07	830	0.2377E-05	1240	0.2448E-05
430	0.1033E-06	840	0.2363E-05	1250	0.2499E-05
440	0.1246E-06	850	0.2544E-05	1260	0.2470E-05
450	0.1497E-06	860	0.2602E-05	1270	0.1464E-05
460	0.1834E-06	870	0.2605E-05	1280	0.2437E-05
470	0.2184E-06	880	0.2700E-05	1290	0.1812E-05
480	0.2526E-06	890	0.2725E-05	1300	0.2154E-05
490	0.2918E-06	900	0.2828E-05	1310	0.2419E-05
500	0.3285E-06	910	0.2861E-05	1320	0.2026E-05
510	0.3770E-06	920	0.2608E-05	1330	0.1977E-05
520	0.4398E-06	930	0.2786E-05	1340	0.1911E-05
530	0.4945E-06	940	0.2312E-05	1350	0.1380E-05
540	0.5477E-06	950	0.2459E-05	1360	0.1713E-05
550	0.6078E-06	960	0.2546E-05	1370	0.1863E-05
560	0.6848E-06	970	0.1921E-05	1380	0.2443E-05
570	0.7127E-06	980	0.2204E-05	1390	0.1869E-05
580	0.8000E-06	990	0.2397E-05	1400	0.1170E-05
590	0.8992E-06	1000	0.1973E-05		
600	0.9454E-06	1010	0.2260E-05		
610	0.9968E-06	1020	0.2259E-05		
620	0.1052E-05	1030	0.2327E-05		
630	0.1132E-05	1040	**		
640	0.1204E-05	1050	0.2148E-05		
650	0.1278E-05	1060	0.1560E-05		
660	0.1353E-05	1070	0.2376E-05		
670	0.1420E-05	1080	0.2017E-05		
680	0.1479E-05	1090	0.2367E-05		
690	0.1557E-05	1100	0.2069E-05		
700	0.1635E-05	1110	0.2051E-05		
710	0.1676E-05	1120	0.1569E-05		
720	0.1742E-05	1130	0.2143E-05		
730	0.1801E-05	1140	0.2126E-05		

**-VALUE BELOW DETECTOR SENSITIVITY


SPECTRAL IRRADIANCE
LAMP TYPE 500T3/7 (500 WATT) 120 VOLTS
SAMPLE NO. 0291
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-4
10^-5
10^-6
10^-7
10^-8
10^-9
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: F48T12-CW-HO

DATE TESTED: JAN 16, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 10.8 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.3539E 04 UW CM**-2SR**-1

I (ACGIH) = 0.1179E-07 W CM**-2

TIME (ACGIH) = 0.2545E+06 SECONDS

SAMPLE NUMBER: 0034

TIME OF DAY: 1226

IRRADIANCES:

E (260-320) = 0.2933E-06 W CM**-2

E (320-400) = 0.1186E-05 W CM**-2

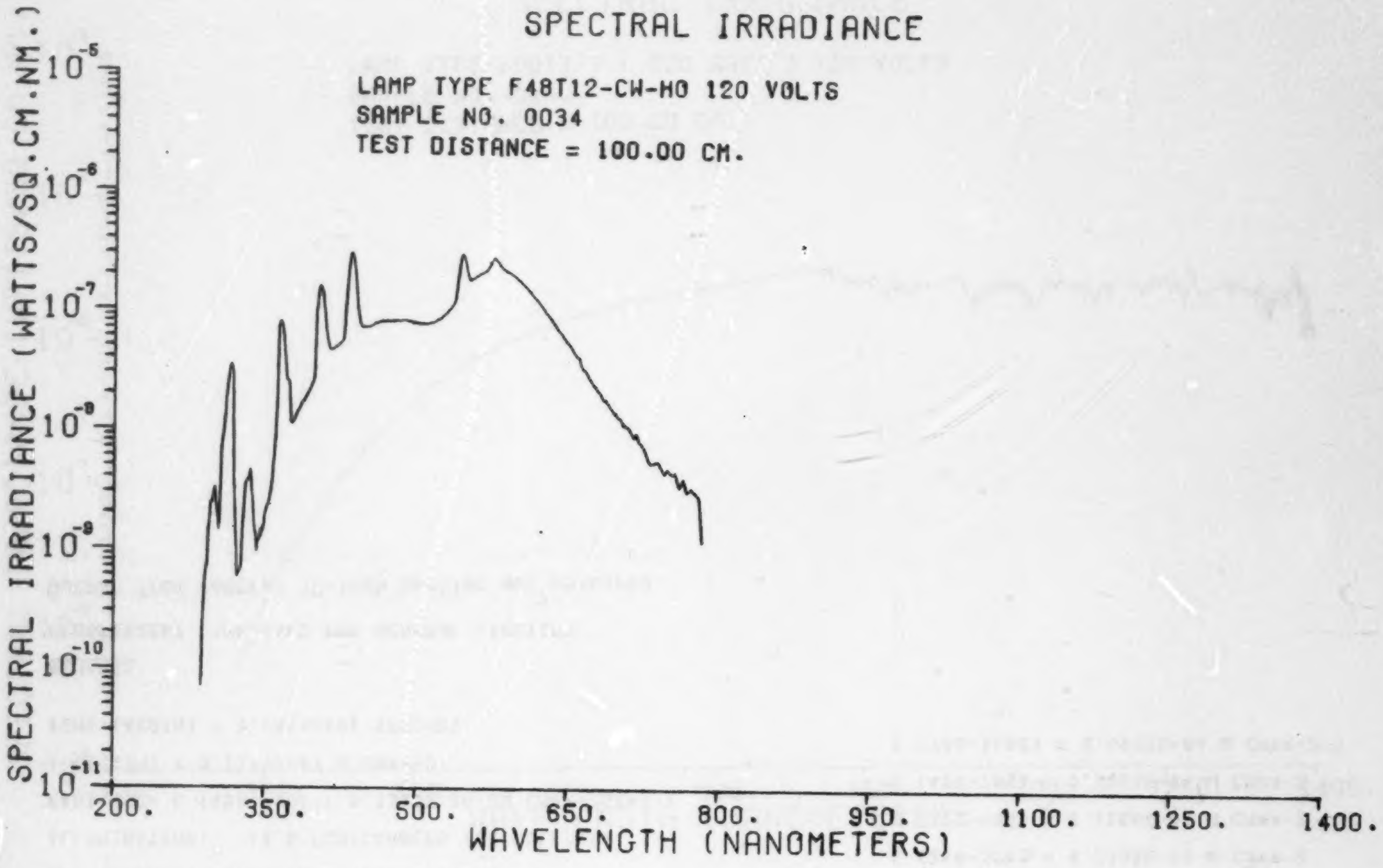
E (400-700) = 0.3265E-04 W CM**-2

E (700-1400) = 0.4922E-06 W CM**-2

REMARKS:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING

Output from central 10-inch section was measured.


SPECTRAL IRRADIANCE
LAMP TYPE F48T12-CW-HO 120 VOLTS
SAMPLE NO. 0034
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-5
10^-6
10^-7
10^-8
10^-9
10^-10
10^-11
200. 350. 500. 650. 800. 950. 1100. 1250. 1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: F48T12-CW-HO

DATE TESTED: JAN 16, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 10.8 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.3668E 04 UW CM**-2SR**-1

I (ACGIH) = 0.6798E-08 W CM**-2

TIME (ACGIH) = 0.4413E+06 SECONDS

REMARKS:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING

Output from central 10-inch section was measured.

SAMPLE NUMBER: 0035

TIME OF DAY: 803

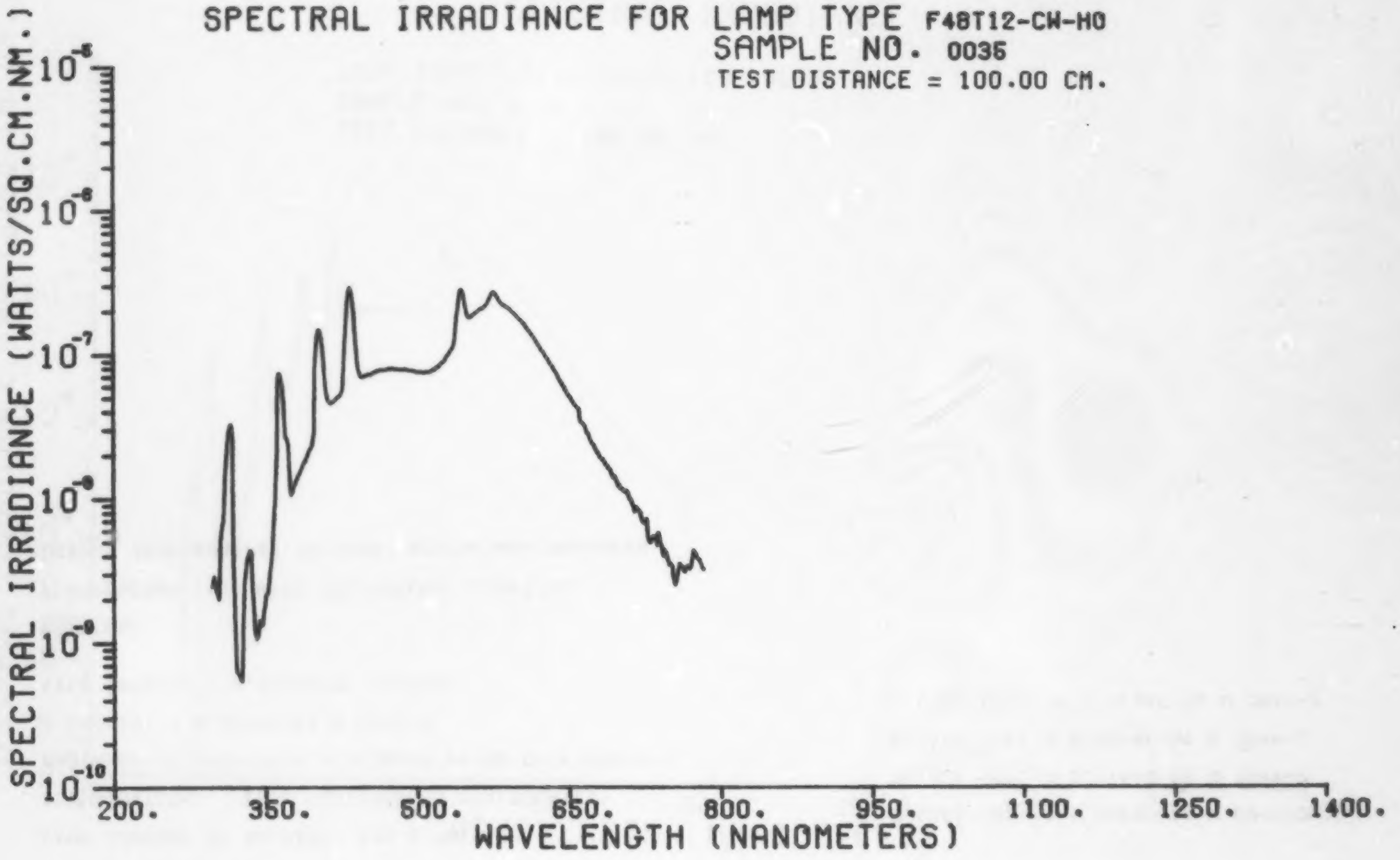
IRRADIANCES:

E (260-320) = 0.2527E-06 W CM**-2

E (320-400) = 0.1164E-05 W CM**-2

E (400-700) = 0.3244E-04 W CM**-2

E (700-1400) = 0.4690E-06 W CM**-2



SPECTRAL IRRADIANCE FOR LAMP TYPE F48T12-CW-HO
SAMPLE NO. 0036
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-5
10^-6
10^-7
10^-8
10^-9
10^-10
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: F48T12-CW-HO

DATE TESTED: JAN 16, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 12.0 VOLTS

ILLUMINATION: 10.7 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.3625E 04 UW CM**-2SR**-1

I (ACGIH) = 0.1167E-07 W CM**-2

TIME (ACGIH) = 0.2570E+06 SECONDS

SAMPLE NUMBER: 0036

TIME OF DAY: 1015

IRRADIANCES:

E (260-320) = 0.2643E-06 W CM**-2

E (320-400) = 0.1229E-05 W CM**-2

E (400-700) = 0.3235E-04 W CM**-2

E (700-1400) = 0.4812E-06 W CM**-2

REMARKS:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING

Output from central 10-inch section was measured.

SPECTRAL IRRADIANCE
LAMP TYPE F48T12-CW-HO 120VOLTS
SAMPLE NO. 0036
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: F84 T12-CW-HO

DATE TESTED: JAN 16, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 10.7 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.3521E 04 UW CM**-2SR**-1

I (ACGIH) = 0.3991E-08 W CM**-2

TIME (ACGIH) = 0.7516E+06 SECONDS

REMARKS:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING

Output from central 10-inch section was measured.

SAMPLE NUMBER: 0037

TIME OF DAY: 1435

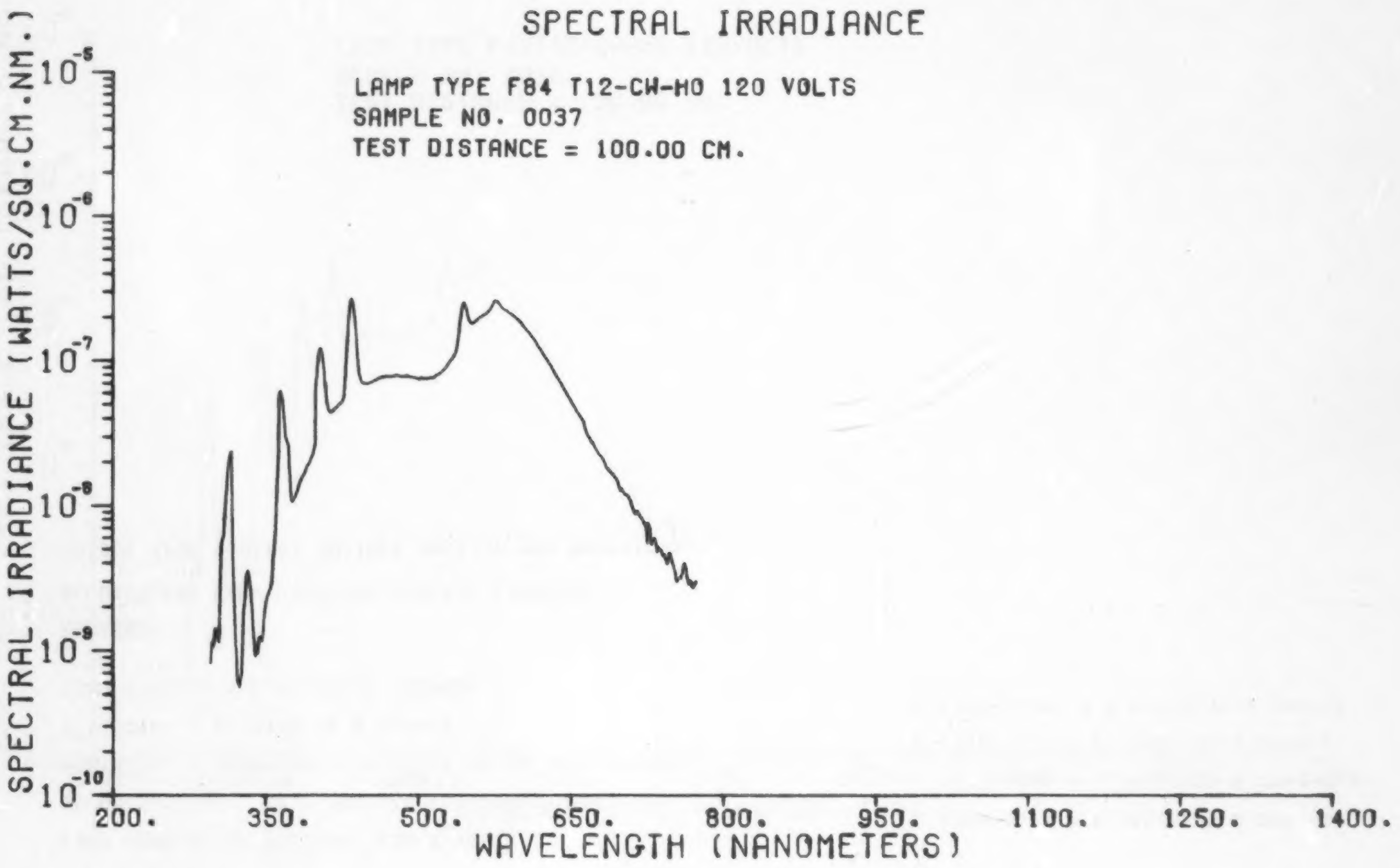
IRRADIANCES:

E (260-320) = 0.1802E-06 W CM**-2

E (320-400) = 0.1035E-05 W CM**-2

E (400-700) = 0.3193E-04 W CM**-2

E (700-1400) = 0.4482E-06 W CM**-2


SPECTRAL IRRADIANCE
LAMP TYPE F84 T12-CW-HO 120 VOLTS
SAMPLE NO. 0037
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: F84T12-CW-HO

DATE TESTED: JAN 16, 1978

AMBIENT TEMPERATURE: 76.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 11.6 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.3795E 04 UW CM**-2SR**-1

I (ACGIH) = 0.4753E-08 W CM**-2

TIME (ACGIH) = 0.6312E+06 SECONDS

REMARKS:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING

Output from central 10-inch section was measured.

SAMPLE NUMBER: 0038

TIME OF DAY: 1857

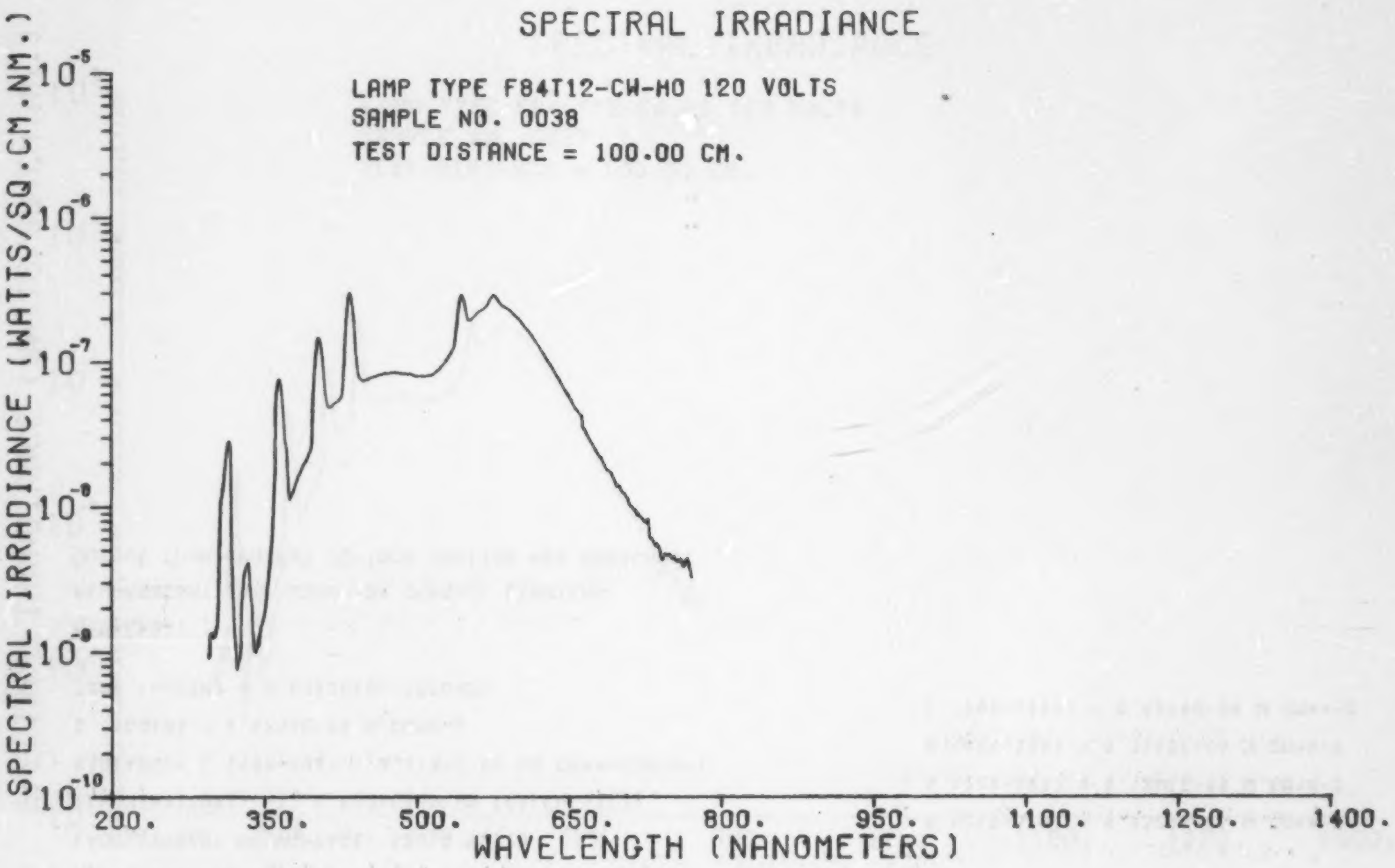
IRRADIANCES:

E (260-320) = 0.2320E-06 W CM**-2

E (320-400) = 0.1266E-05 W CM**-2

E (400-700) = 0.3485E-04 W CM**-2

E (700-1400) = 0.4879E-06 W CM**-2



SPECTRAL IRRADIANCE
LAMP TYPE F84T12-CW-HO 120 VOLTS
SAMPLE NO. 0038
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: F84T12-CW-HO

DATE TESTED: JAN 16, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 11.3 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.3509E 04 UW CM**-2SR**-1

I (ACGIH) = 0.4119E-08 W CM**-2

TIME (ACGIH) = 0.7283E+06 SECONDS

SAMPLE NUMBER: 0039

TIME OF DAY: 2117

<u>IRRADIANCES</u>:

E (260-320) = 0.1862E-06 W CM**-2

E (320-400) = 0.1097E-05 W CM**-2

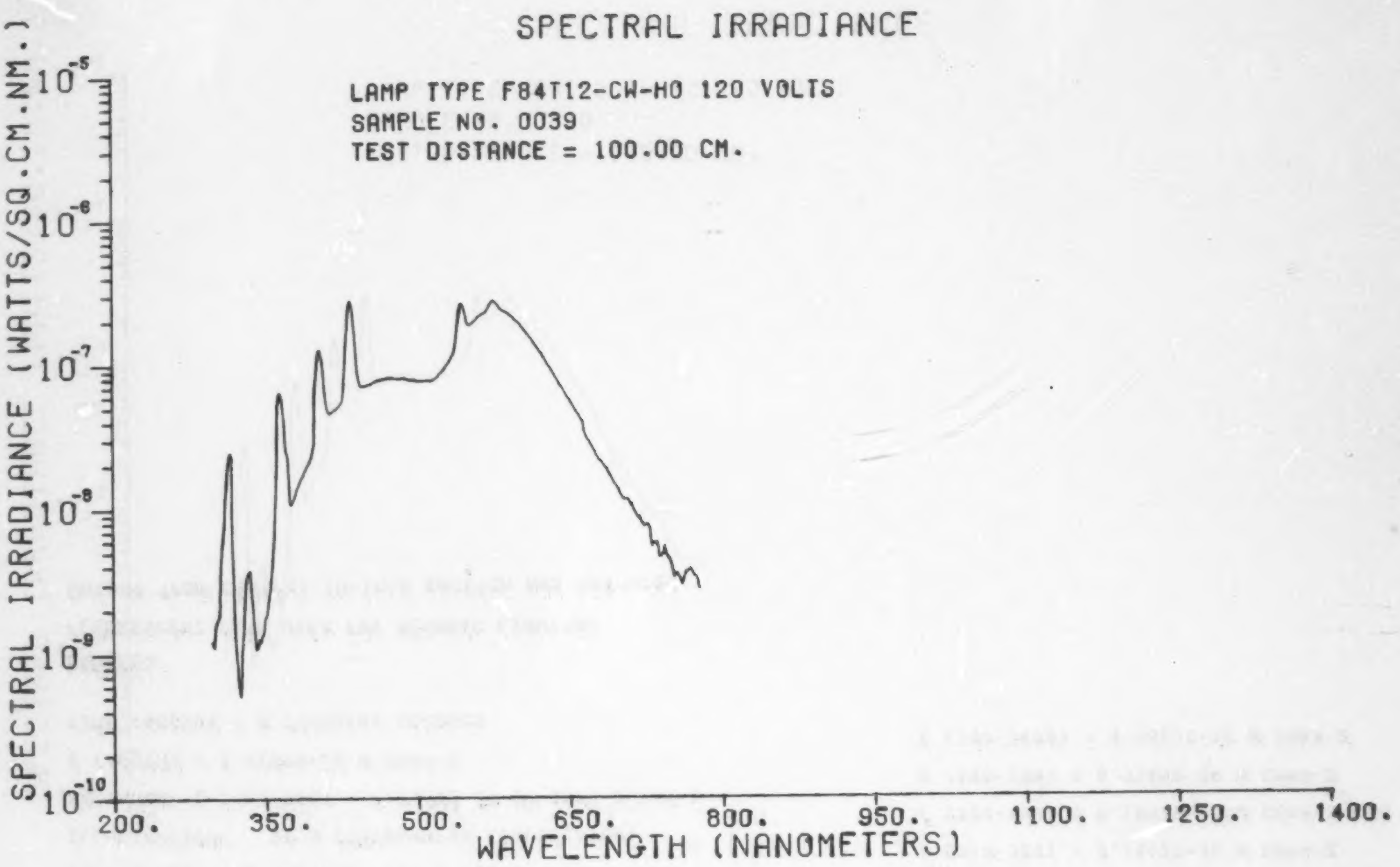
E (400-700) = 0.3365E-04 W CM**-2

E (700-1400) = 0.4863E-06 W CM**-2

<u>REMARKS</u>:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING

Output from central 10-inch section was measured.


SPECTRAL IRRADIANCE
LAMP TYPE F84T12-CW-HO 120 VOLTS
SAMPLE NO. 0039
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-5
10^-6
10^-7
10^-8
10^-9
10^-10
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: F96PG17-CW POWER GROOVE

DATE TESTED: JAN 23, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 16.3 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.5753E 04 UW CM**-2SR**-1

I (ACGIH) = 0.9561E-09 W CM**-2

TIME (ACGIH) = 0.3138E+07 SECONDS

REMARKS:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING

Output from central 10-inch section was measured.

SAMPLE NUMBER: 0040

TIME OF DAY: 1015

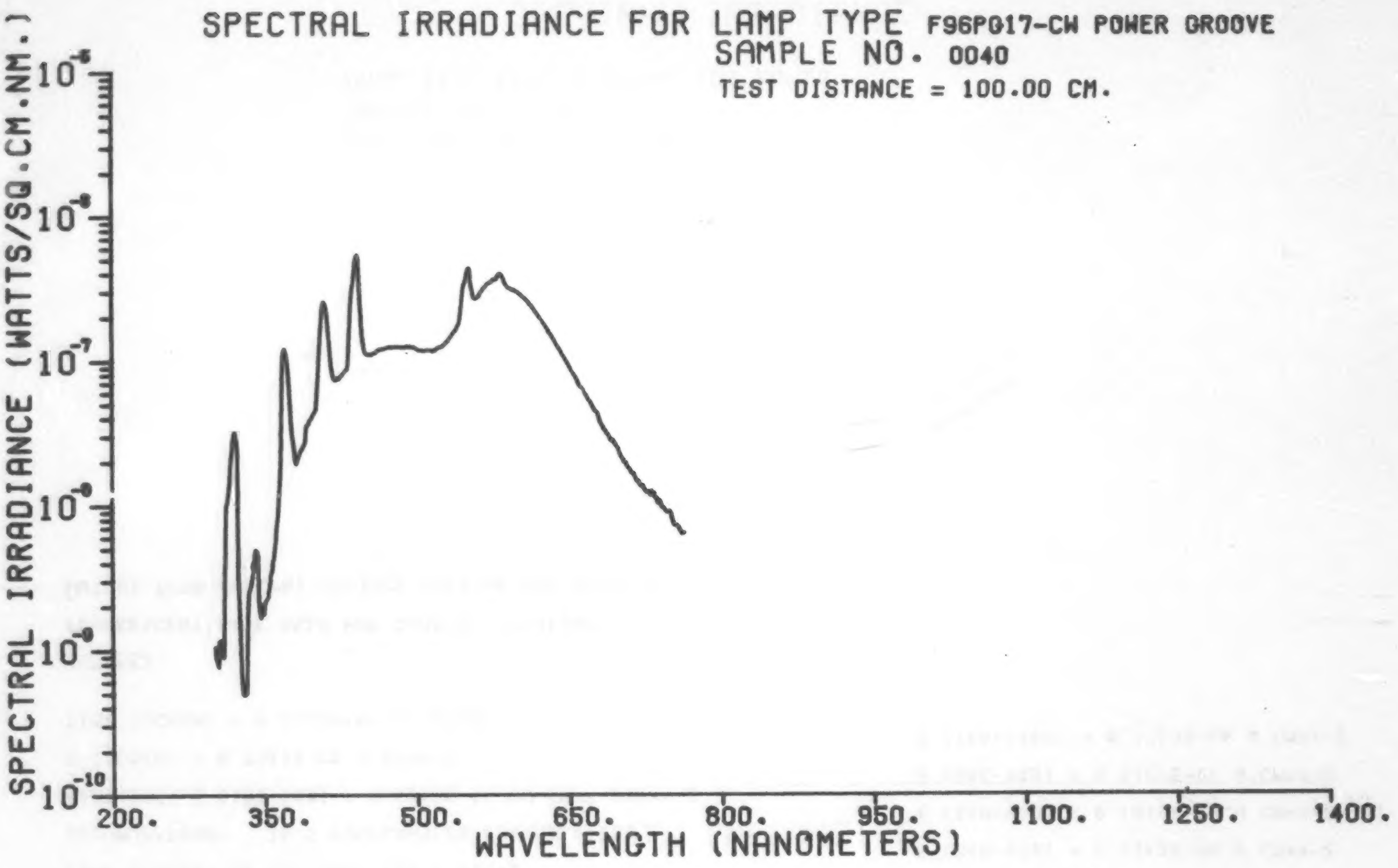
IRRADIANCES:

E (260-320) = 0.1268E-06 W CM**-2

E (320-400) = 0.1814E-05 W CM**-2

E (400-700) = 0.5127E-04 W CM**-2

E (700-1400) = 0.7783E-06 W CM**-2


SPECTRAL IRRADIANCE FOR LAMP TYPE F96PG17-CW POWER GROOVE
SAMPLE NO. 0040
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-6
10^-8
10^-7
10^-8
10^-9
10^-10
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: F96PG17-CW POWER GROOVE

DATE TESTED: JAN 23, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 16.9 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.5512E 04 UW CM**-2SR**-1

I (ACGIH) = 0.1424E-08 W CM**-2

TIME (ACGIH) = 0.2106E+07 SECONDS

<u>REMARKS</u>:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING
Output from central 10-inch section was measured.

SAMPLE NUMBER: 0041

TIME OF DAY: 1412

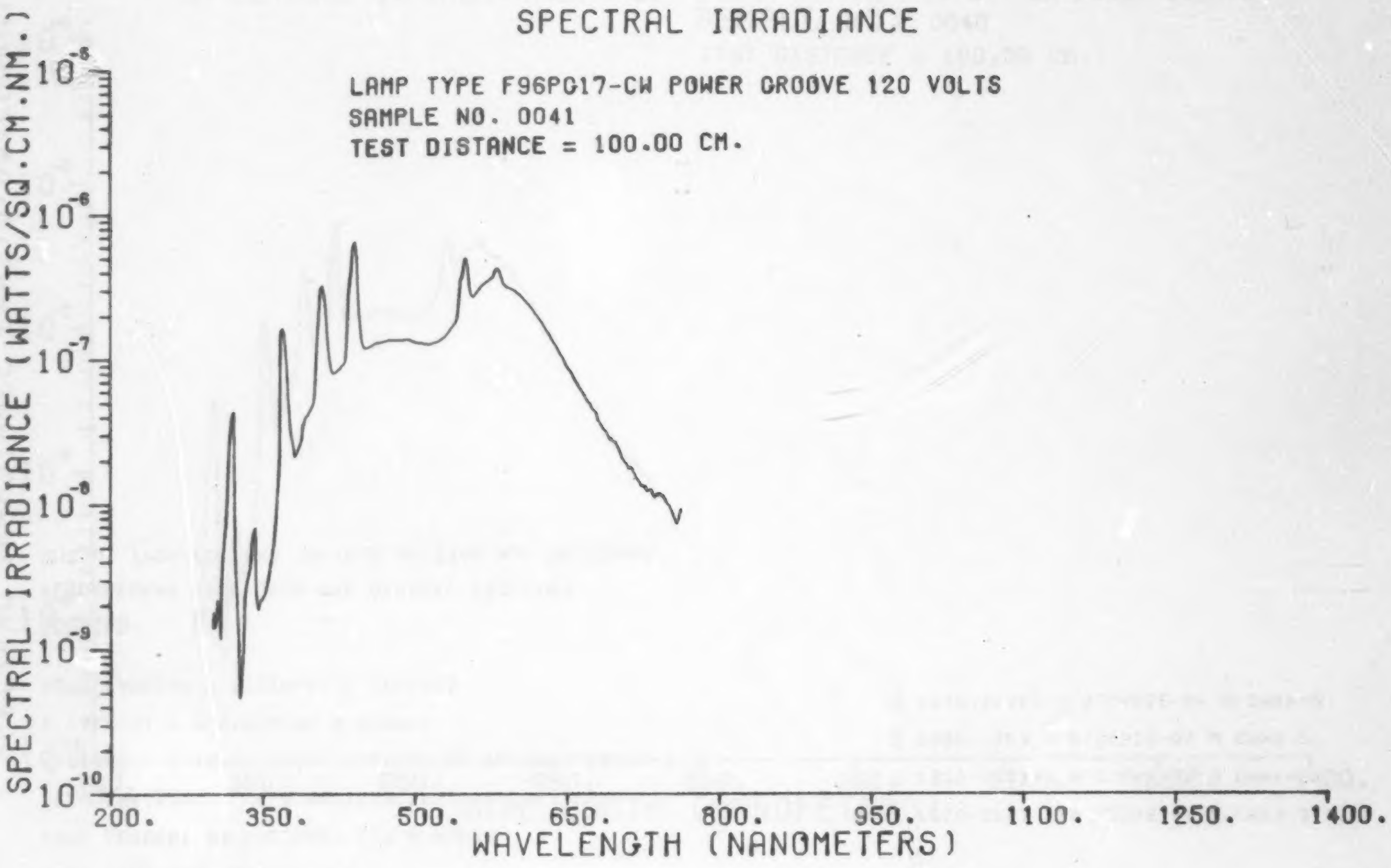
<u>IRRADIANCES</u>:

E (260-320) = 0.1254E-06 W CM**-2

E (320-400) = 0.2164E-05 W CM**-2

E (400-700) = 0.5451E-04 W CM**-2

E (700-1400) = 0.8485E-06 W CM**-2


SPECTRAL IRRADIANCE
LAMP TYPE F96PG17-CW POWER GROOVE 120 VOLTS
SAMPLE NO. 0041
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-5
10^-6
10^-7
10^-8
10^-9
10^-10
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: F96PG17-CW POWER GROOVE

DATE TESTED: JAN 23, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 16.3 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.5139E 04 UW CM**-2SR**-1

I (ACGIH) = 0.9102E-09 W CM**-2

TIME (ACGIH) = 0.3296E+07 SECONDS

<u>REMARKS</u>:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING

Output from central 10-inch section was measured.

SAMPLE NUMBER: 0042

TIME OF DAY: 1206

<u>IRRADIANCES</u>:

E (260-320) = 0.1086E-06 W CM**-2

E (320-400) = 0.1785E-05 W CM**-2

E (400-700) = 0.5116E-04 W CM**-2

E (700-1400) = 0.7590E-06 W CM**-2

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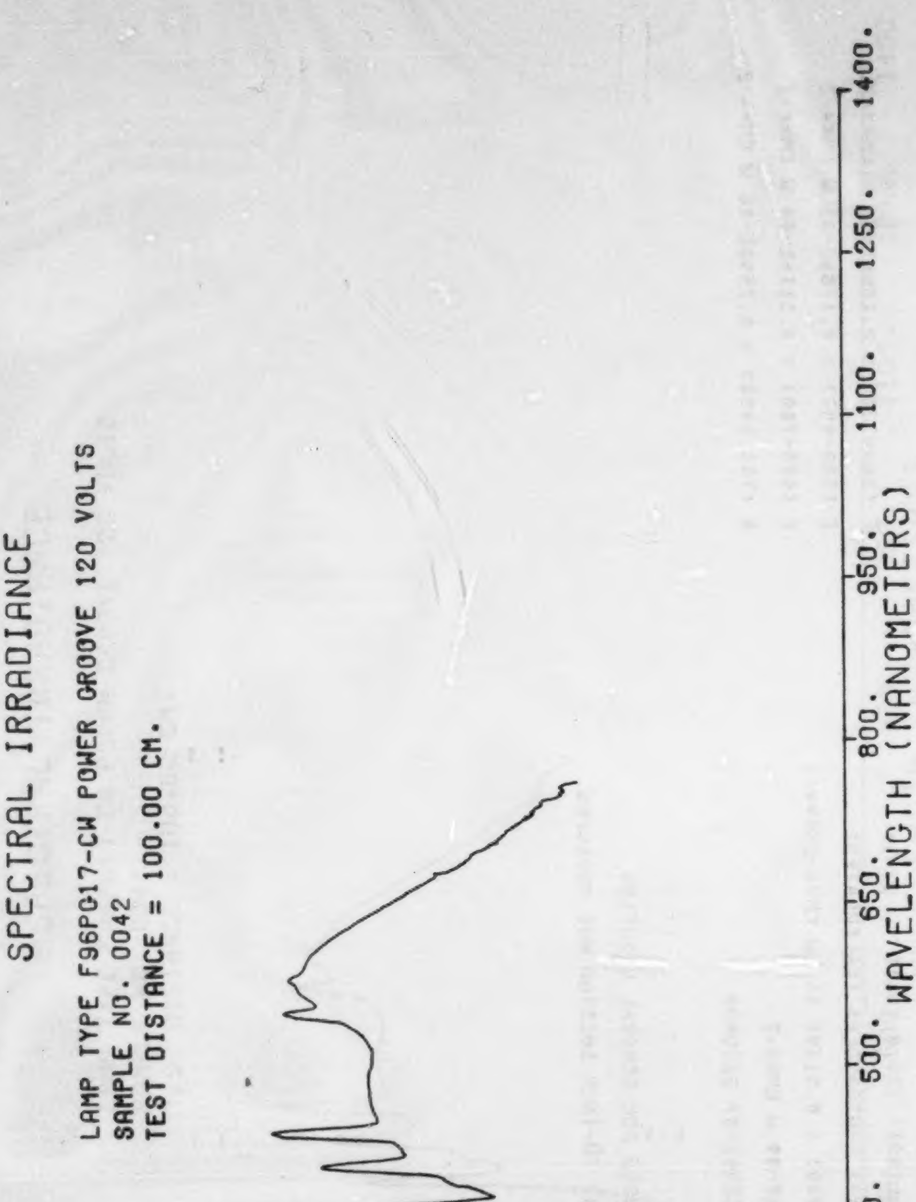


LAMP TYPE: F96T12-CW-1500

DATE TESTED: JAN 23, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 12.8 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.5705E 04 UW CM**-2SR**-1

I (ACGIH) = 0.1804E-07 W CM**-2

TIME (ACGIH) = 0.1663E+06 SECONDS

SAMPLE NUMBER: 0043

TIME OF DAY: 1603

IRRADIANCES:

E (260-320) = 0.1812E-06 W CM**-2

E (320-400) = 0.1412E-05 W CM**-2

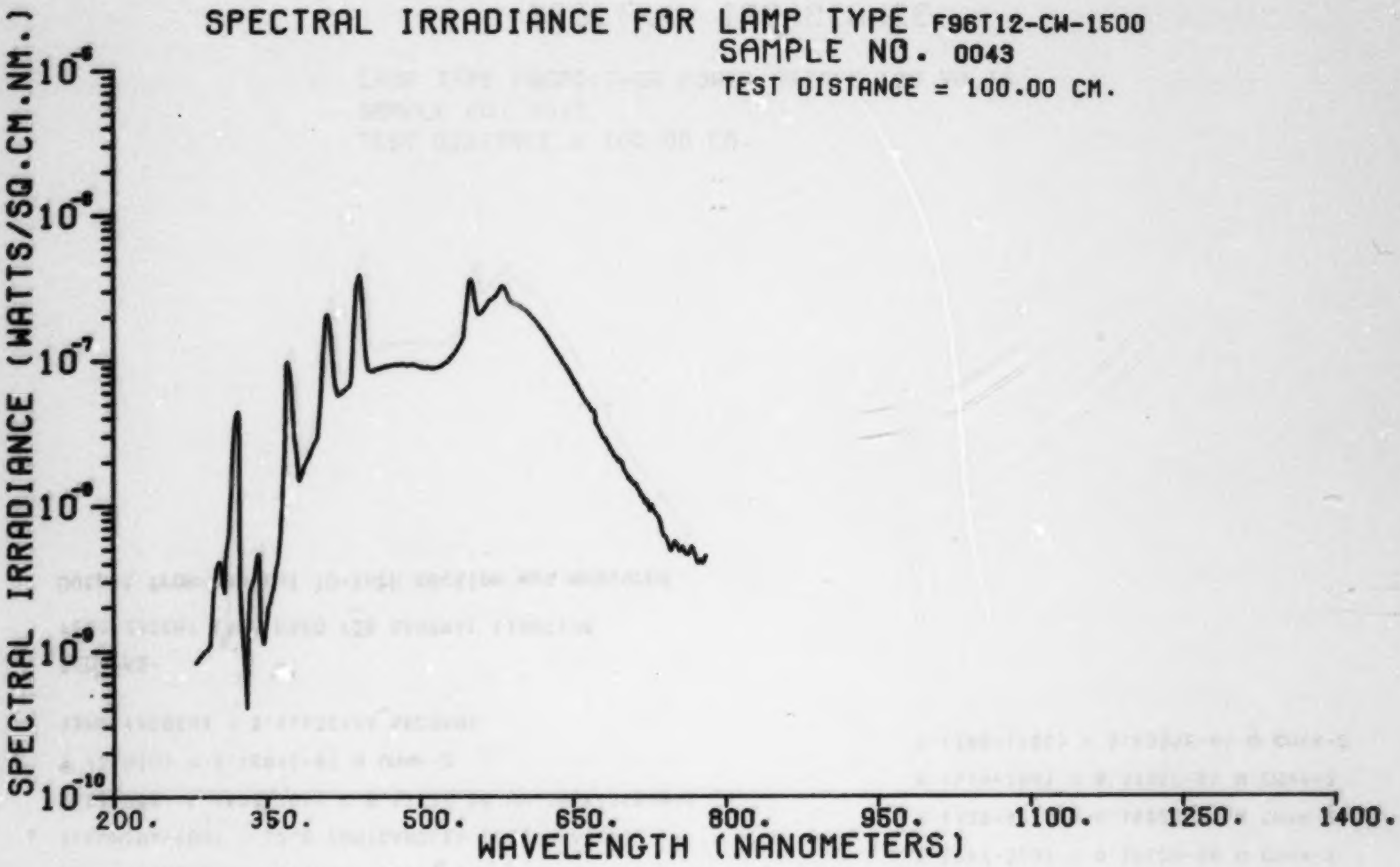
E (400-700) = 0.3998E-04 W CM**-2

E (700-1400) = 0.6555E-06 W CM**-2

REMARKS:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING

Output from central 10-inch section was measured.


SPECTRAL IRRADIANCE FOR LAMP TYPE F96T12-CW-1500
SAMPLE NO. 0043
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-7
10^-8
10^-9
10^-10
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: F96T12-CW-1500

DATE TESTED: JAN 23, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 11.8 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.5218E 04 UW CM**-2SR**-1

I (ACGIH) = 0.6366E-08 W CM**-2

TIME (ACGIH) = 0.4713E+06 SECONDS

REMARKS:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING

Output from central 10-inch section was measured.

SAMPLE NUMBER: 0044

TIME OF DAY: 1757

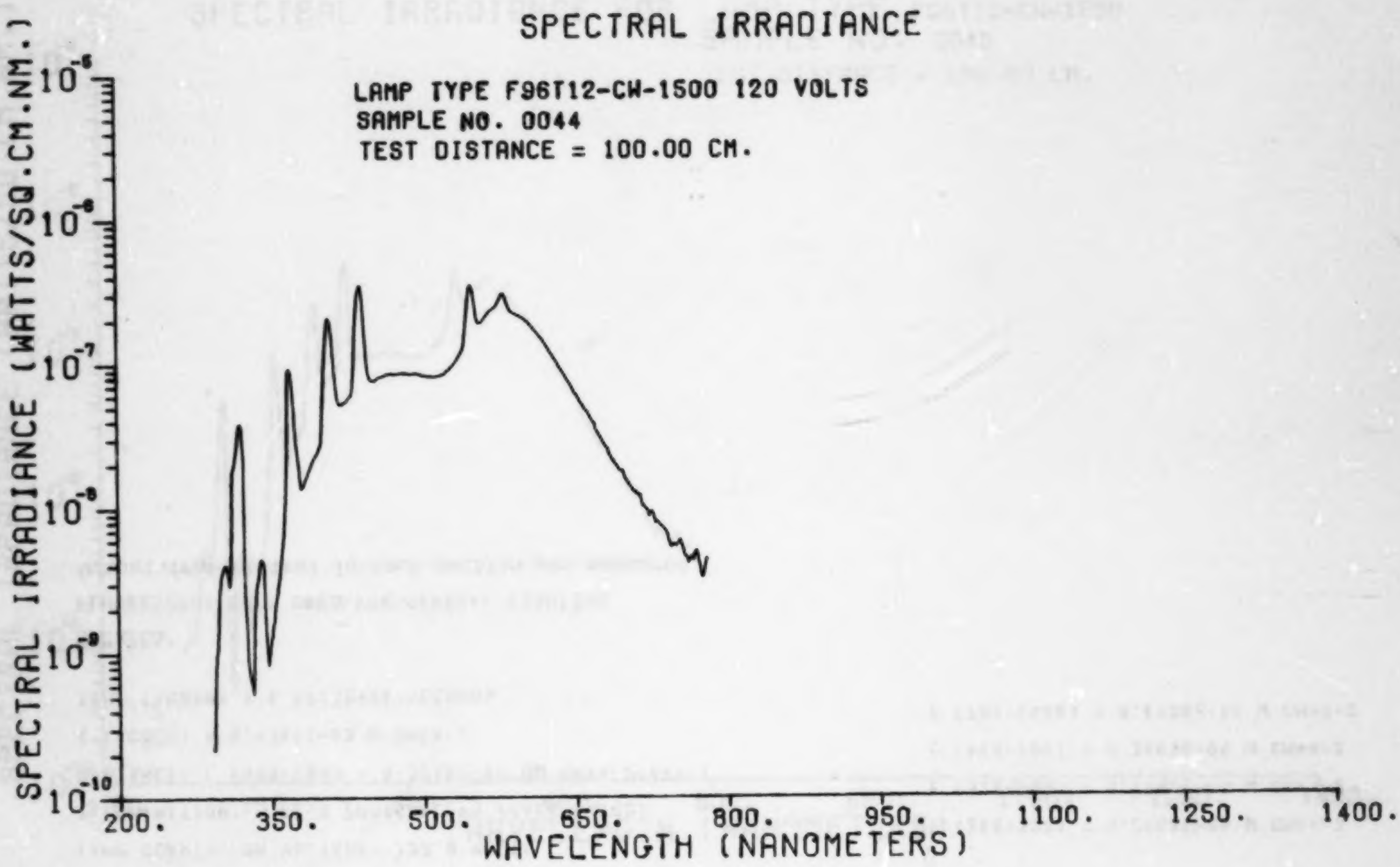
IRRADIANCES:

E (260-320) = 0.2008E-06 W CM**-2

E (320-400) = 0.1343E-05 W CM**-2

E (400-700) = 0.3669E-04 W CM**-2

E (700-1400) = 0.6208E-06 W CM**-2


SPECTRAL IRRADIANCE
LAMP TYPE F96T12-CW-1500 120 VOLTS
SAMPLE NO. 0044
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
WAVELENGTH (NANOMETERS)
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.

LAMP TYPE: F96T12-CW-1500

DATE TESTED: JAN 23, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 13.1 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.5527E 04 UW CM**-2SR**-1

I (ACGIH) = 0.5466E-08 W CM**-2

TIME (ACGIH) = 0.5489E+06 SECONDS

REMARKS:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING

Output from central 10-inch section was measured.

SAMPLE NUMBER: 0045

TIME OF DAY: 1952

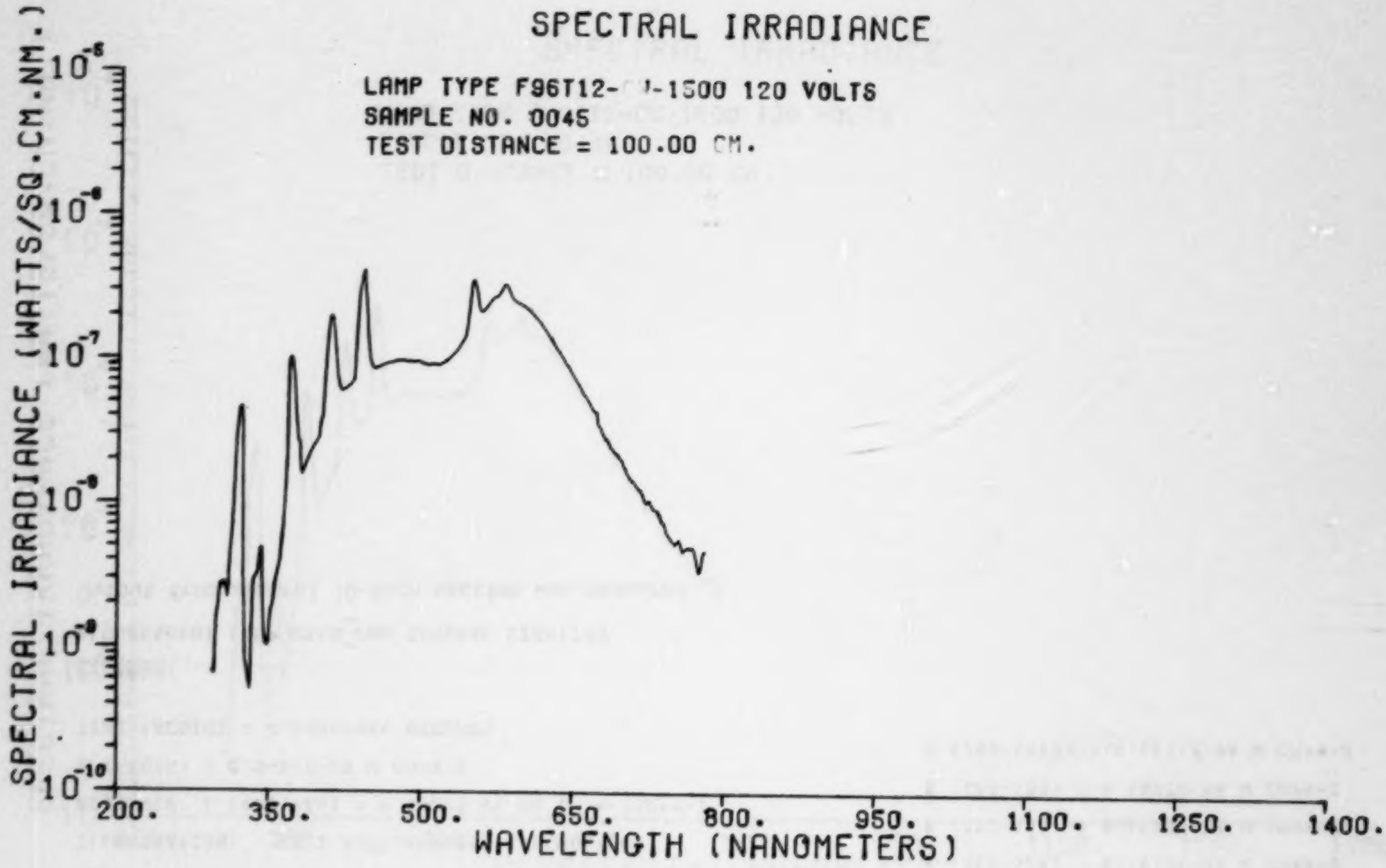
IRRADIANCES:

E (260-320) = 0.1612E-06 W CM**-2

E (320-400) = 0.1575E-05 W CM**-2

E (400-700) = 0.4072E-04 W CM**-2

E (700-1400) = 0.6671E-06 W CM**-2



SPECTRAL IRRADIANCE
LAMP TYPE F96T12- -1500 120 VOLTS
SAMPLE NO. 0045
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-5
10^-6
10^-7
10^-8
10^-9
10^-10
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: F40T12 (TH12)

DATE TESTED: JAN 9, 1978

AMBIENT TEMPERATURE: 76.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 12.0 VOLTS

ILLUMINATION: 5.5 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.2702E 04 UW CM**-2SR**-1

I (ACGIH) = 0.0 W CM**-2

SAMPLE NUMBER: 0049

TIME OF DAY: 810

IRRADIANCES:

E (320-400) = 0.1117E-05 W CM**-2

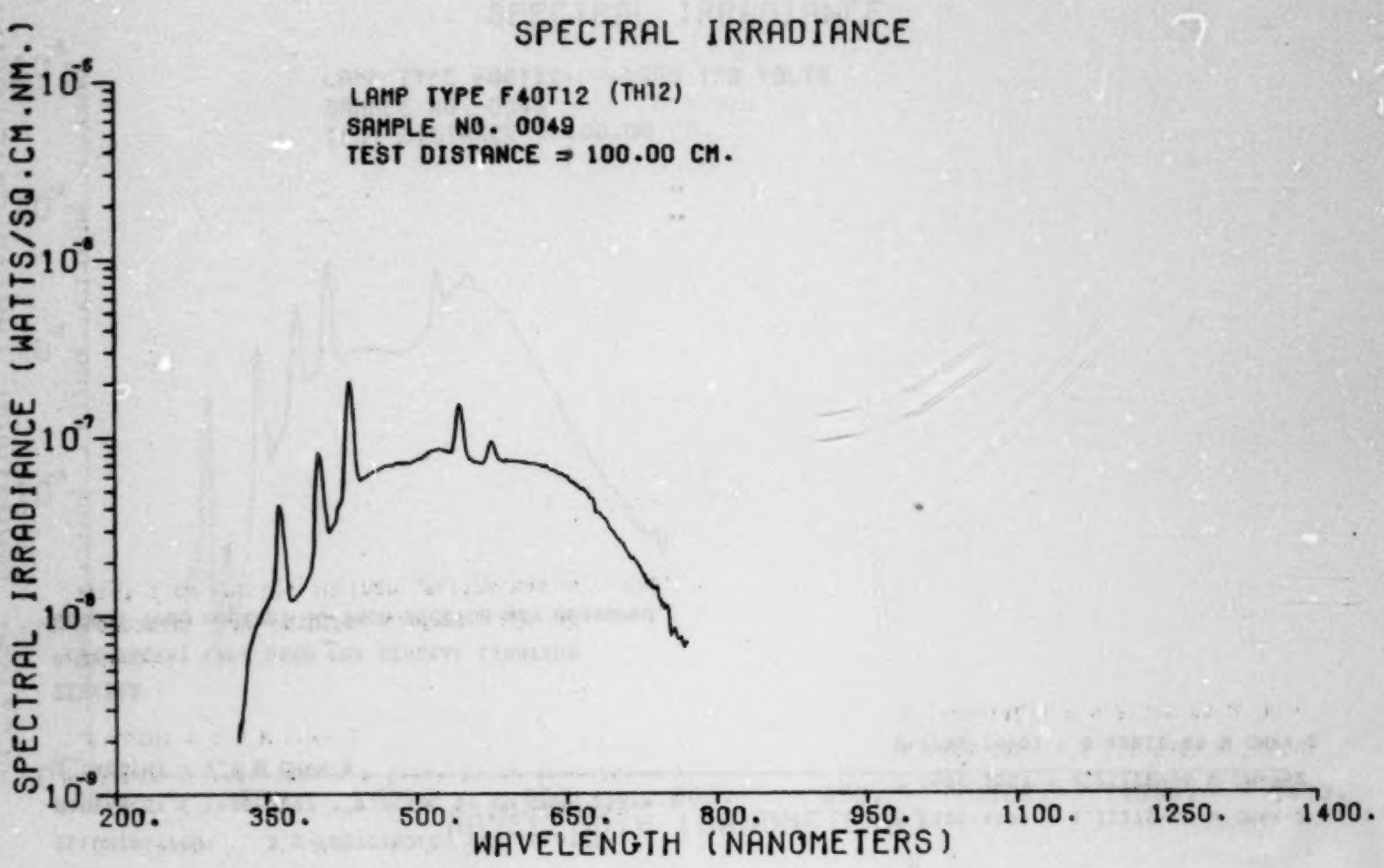
E (400-700) = 0.2111E-04 W CM**-2

E (700-1400) = 0.1081E-05 W CM**-2

REMARKS:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING

Output from central 10-inch section was measured.



SPECTRAL IRRADIANCE
LAMP TYPE F40T12 (TH12)
SAMPLE NO. 0049
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: F40T12 (TH12)

DATE TESTED: JAN 9, 1978

AMBIENT TEMPERATURE: 76.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 4.5 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.2820E 04 UW CM**-2SR**-1

I (ACGIH) = 0.0 W CM**-2

SAMPLE NUMBER: 0050

TIME OF DAY: 1022

IRRADIANCES:

E (320-400) = 0.8820E-06 W CM**-2

E (400-700) = 0.1714E-04 W CM**-2

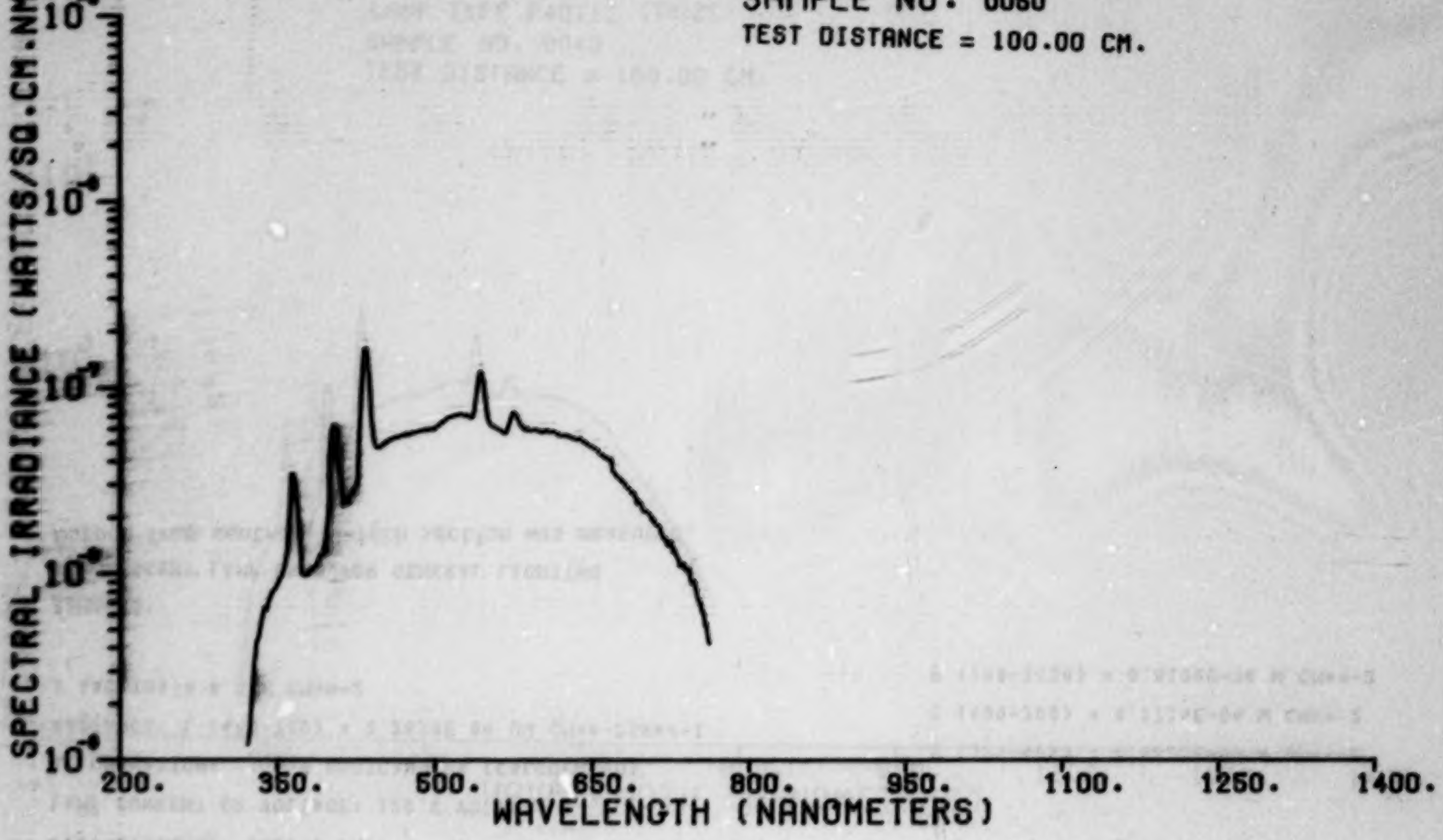
E (700-1400) = 0.8100E-06 W CM**-2

REMARKS:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING

Output from central 10-inch section was measured.

SPECTRAL IRRADIANCE FOR LAMP TYPE F40T12 (TH12)
SAMPLE NO. 0060
TEST DISTANCE = 100.00 CM.



LAMP TYPE: F40T12 (TH12)

DATE TESTED: JAN 9, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 6.0 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.3074E 04 UW CM**-2SR**-1

I (ACGIH) = 0.0 W CM**-2

SAMPLE NUMBER: 0051

TIME OF DAY: 1241

IRRADIANCES:

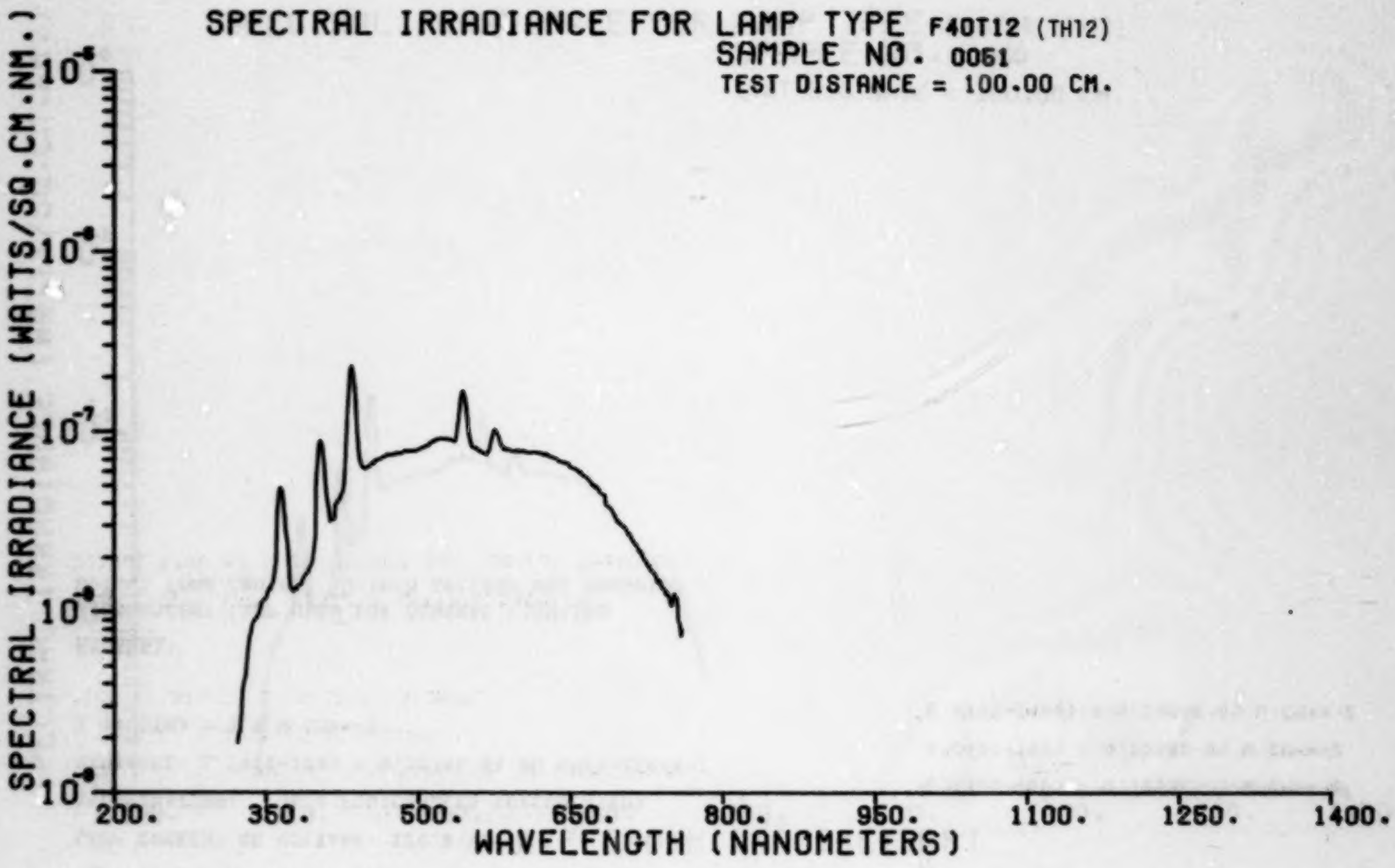
E (320-400) = 0.1253E-05 W CM**-2

E (400-700) = 0.2288E-04 W CM**-2

E (700-1400) = 0.1089E-05 W CM**-2

REMARKS:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING
Output from central 10-inch section was measured.



SPECTRAL IRRADIANCE FOR LAMP TYPE F40T12 (TH12)
SAMPLE NO. 0061
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: 96T12UHO (DUROTEST)	SAMPLE NUMBER: 0052
DATE TESTED: JAN 16, 1978	TIME OF DAY: 1858

AMBIENT TEMPERATURE: 76.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 6.4 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.4206E 04 UW CM**-2SR**-1

I (ACGIH) = 0.5386E-08 W CM**-2

TIME (ACGIH) = 0.5570E+06 SECONDS

<u>IRRADIANCES</u>:

E (260-320) = 0.7177E-07 W CM**-2

E (320-400) = 0.1085E-05 W CM**-2

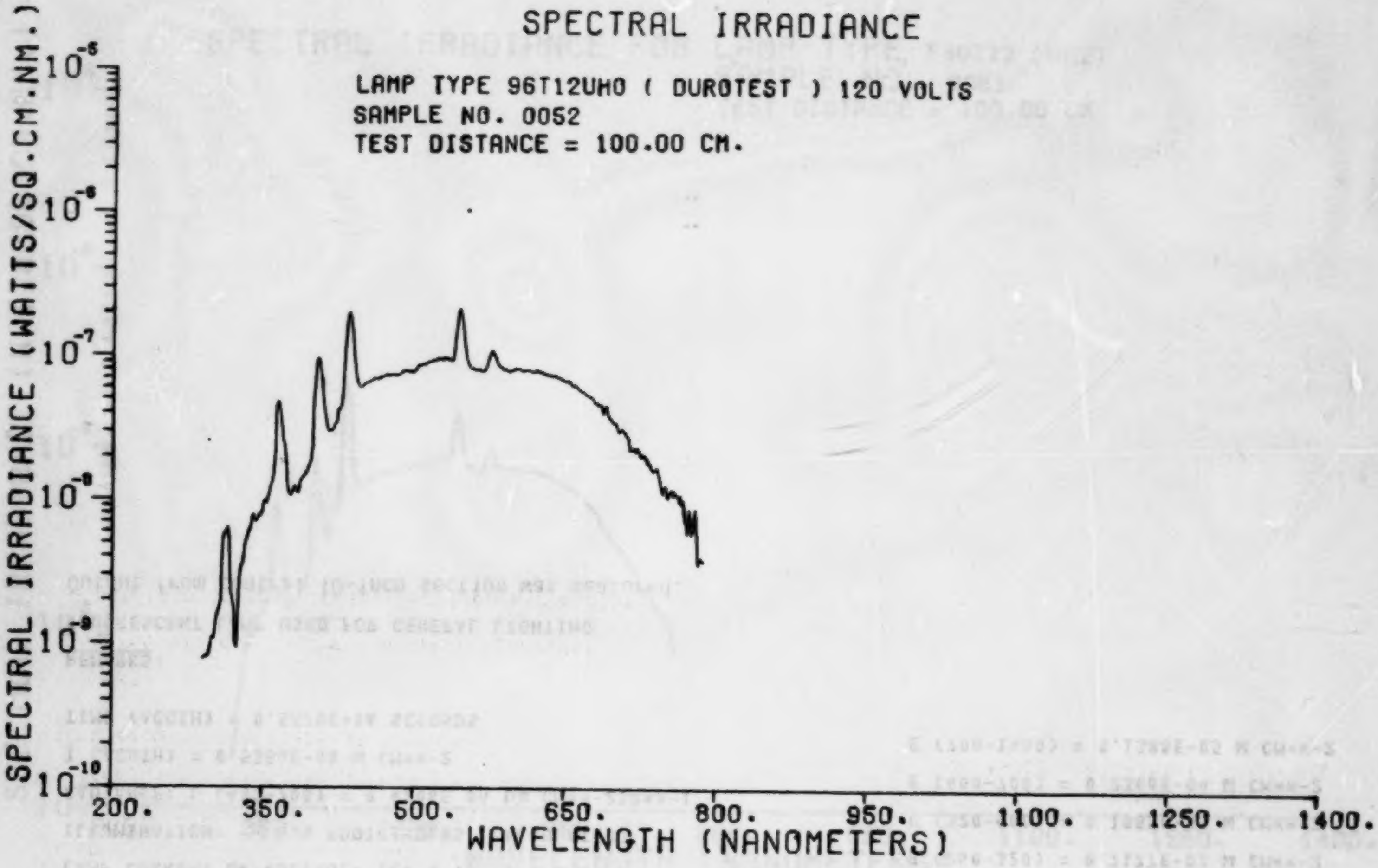
E (400-700) = 0 2366E-04 W CM**-2

E (700-1400) = 0.1388E-05 W CM**-2

<u>REMARKS</u>:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING

Output from central 10-inch section was measured.


SPECTRAL IRRADIANCE
LAMP TYPE 96T12UHO (DUROTEST) 120 VOLTS
SAMPLE NO. 0052
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
WAVELENGTH (NANOMETERS)
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.

LAMP TYPE: 96T12UHO (DUROTEST)

DATE TESTED: JAN 16, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 6.1 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.3933E 04 UW CM**-2SR**-1

I (ACGIH) = 0.4152E-08 W CM**-2

TIME (ACGIH) = 0.7225E+06 SECONDS

SAMPLE NUMBER: 0053

TIME OF DAY: 2055

IRRADIANCES:

E (260-320) = 0.9966E-07 W CM**-2

E (320-400) = 0.1393E-05 W CM**-2

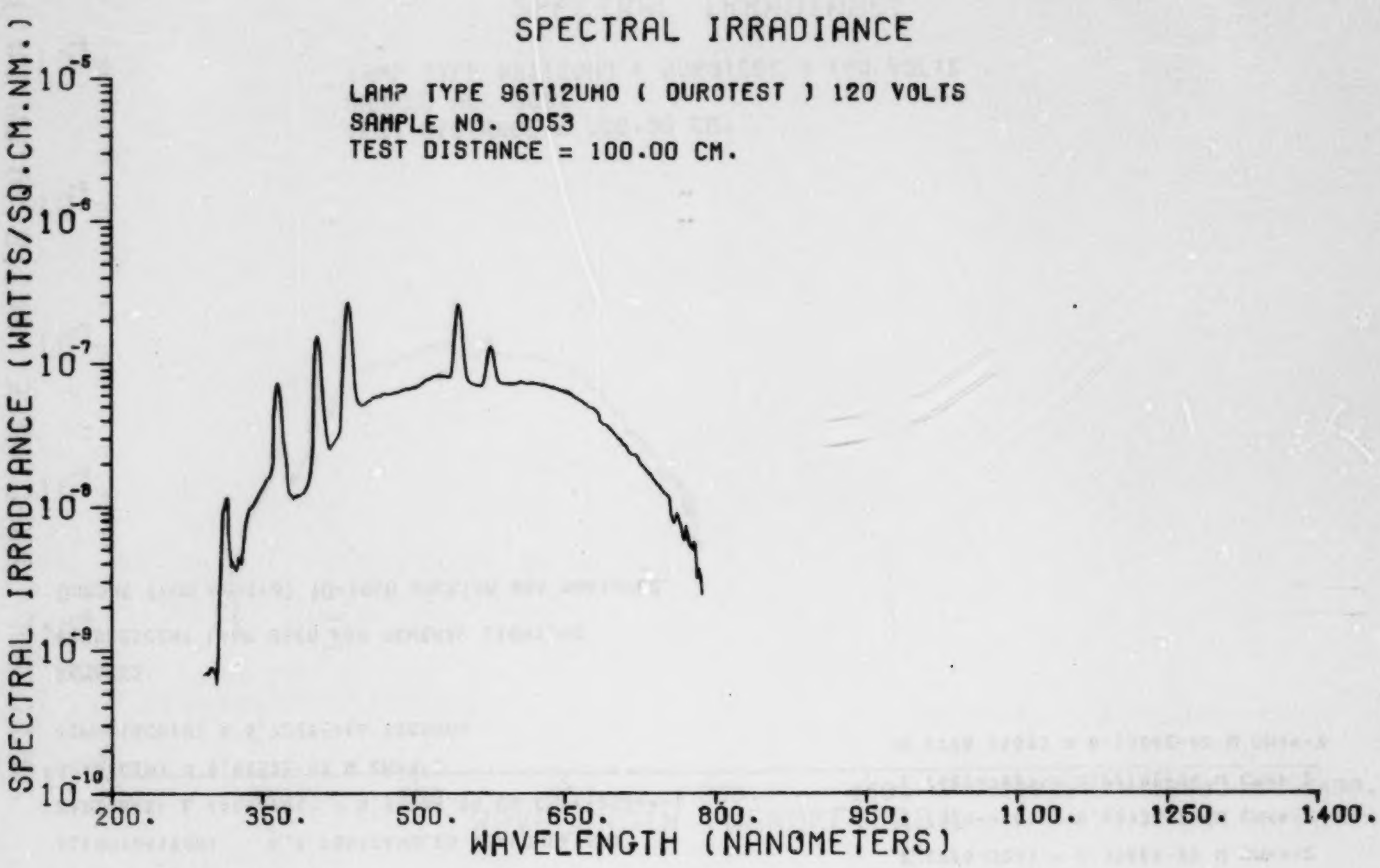
E (400-700) = 0.2270E-04 W CM**-2

E (700-1400) = 0.1306E-05 W CM**-2

REMARKS:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING

Output from central 10-inch section was measured.


SPECTRAL IRRADIANCE
LAMP TYPE 96T12UHO (DUROTEST) 120 VOLTS
SAMPLE NO. 0053
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-5
10^-6
10^-7
10^-8
10^-9
10^-10
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: 96T12UHO (DUROTEST)

DATE TESTED: JAN 16, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 7.0 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.4419E 04 UW CM**-2SR**-1

I (ACGIH) = 0.5127E-08 W CM**-2

TIME (ACGIH) = 0.5852E+06 SECONDS

SAMPLE NUMBER: 0054

TIME OF DAY: 2307

<u>IRRADIANCES</u>:

E (260-320) = 0.1195E-06 W CM**-2

E (320-400) = 0.1331E-05 W CM**-2

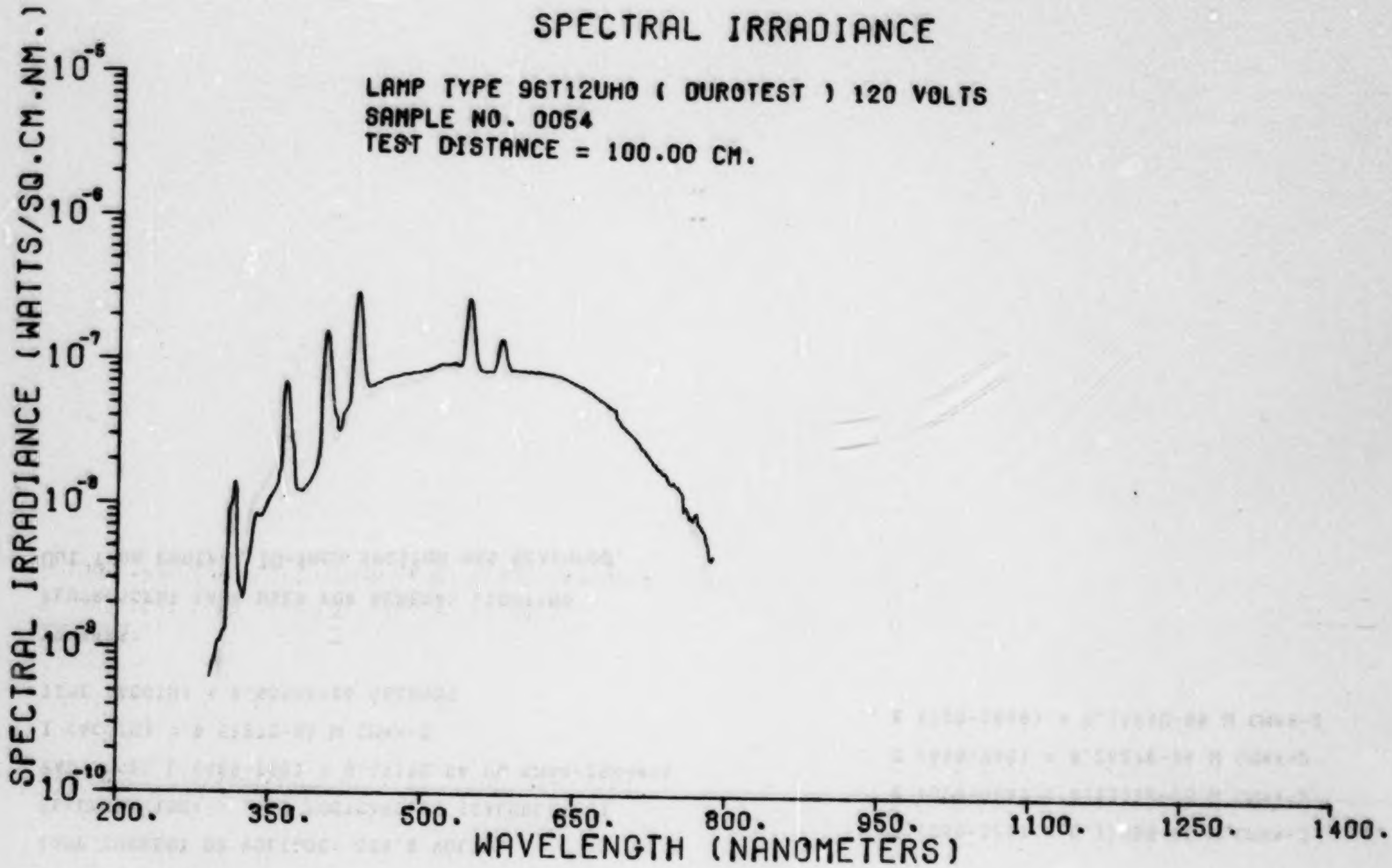
E (400-700) = 0.2627E-04 W CM**-2

E (700-1400) = 0.1409E-05 W CM**-2

<u>REMARKS</u>:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING

Out from central 10-inch section was measured.


SPECTRAL IRRADIANCE
LAMP TYPE 96T12UHO (DUROTEST) 120 VOLTS
SAMPLE NO. 0054
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-5
10^-6
10^-7
10^-8
10^-9
10^-10
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: DUROTEST COLORCLASSER 75 (18 INCH)

DATE TESTED: FEB 24, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 4.5 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.2761E 04 UW CM**-2SR**-1

I (ACGIH) = 0.3497E-09 W CM**-2

TIME (ACGIH) = 0.8578E+07 SECONDS

SAMPLE NUMBER: 0064

TIME OF DAY: 1555

IRRADIANCES:

E (260-320) = 0.2791E-07 W CM**-2

E (320-400) = 0.6372E-06 W CM**-2

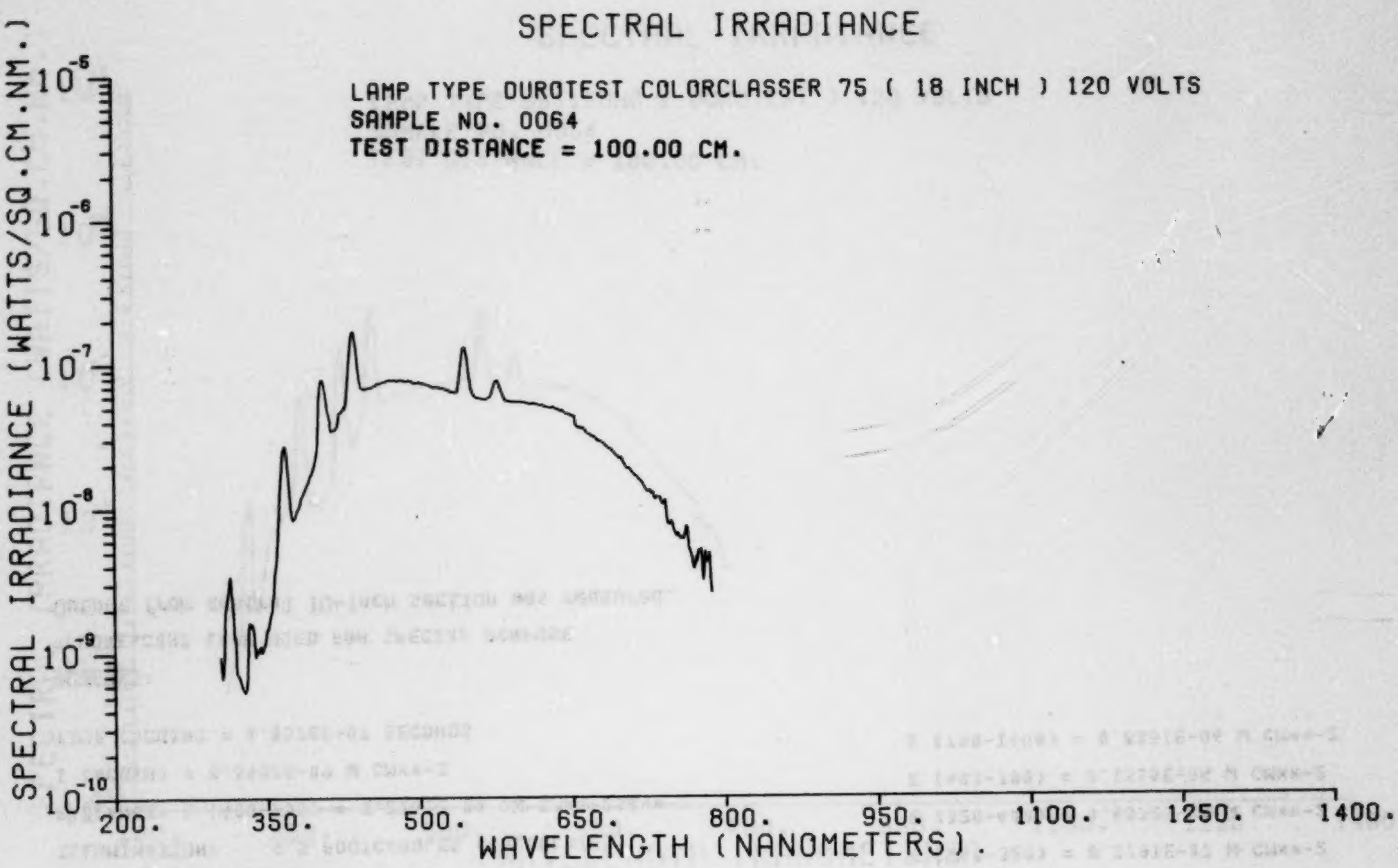
E (400-700) = 0.1816E-04 W CM**-2

E (700-1400) = 0.8851E-06 W CM**-2

REMARKS:

FLUORESCENT LAMP USED FOR SPECIAL PURPOSE

Output from central 10-inch section was measured.


SPECTRAL IRRADIANCE
LAMP TYPE DUROTEST COLORCLASSER 75 (18 INCH) 120 VOLTS
SAMPLE NO. 0064
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-5
10^-6
10^-7
10^-8
10^-9
10^-10
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS).

LAMP TYPE: DUROTEST COLORCLASSER 75 (18 INCH)

DATE TESTED: FEB 24, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 3.5 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.2863E 04 UW CM**-2SR**-1

I (ACGIH) = 0.4899E-09 W CM**-2

TIME (ACGIH) = 0.6124E+07 SECONDS

SAMPLE NUMBER: 0065

TIME OF DAY: 1748

IRRADIANCES:

E (260-320) = 0.2594E-07 W CM**-2

E (320-400) = 0.5093E-06 W CM**-2

E (400-700) = 0.1410E-04 W CM**-2

E (700-1400) = 0.6420E-06 W CM**-2

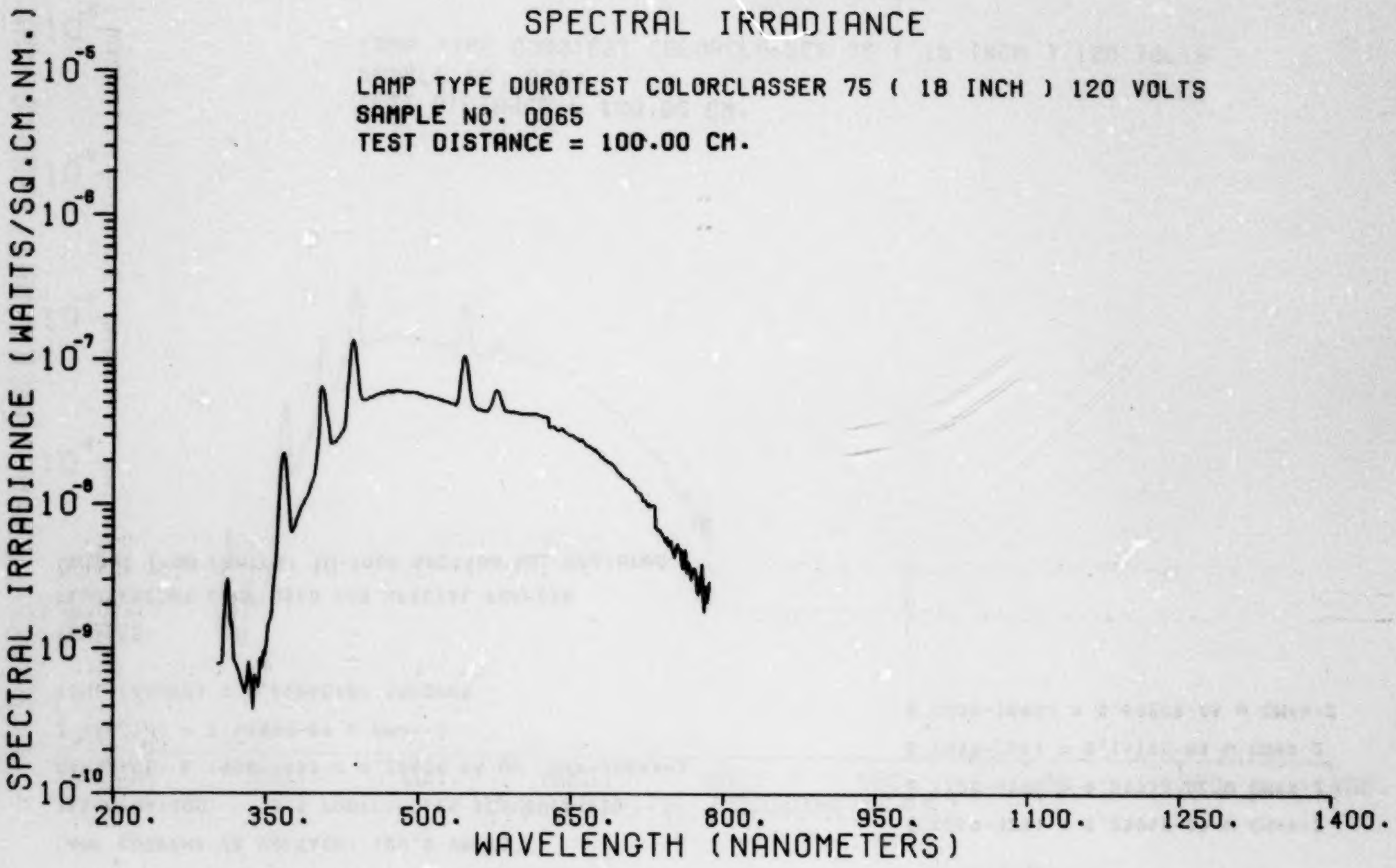
REMARKS:

FLUORESCENT LAMP USED FOR SPECIAL PURPOSE

Output from central 10-inch section was measured.

SPECTRAL IRRADIANCE

LAMP TYPE DUROTEST COLORCLASSER 75 (18 INCH) 120 VOLTS
SAMPLE NO. 0065
TEST DISTANCE = 100.00 CM.



LAMP TYPE: DUROTEST COLORCLASSER 75 (18 INCH)

DATE TESTED: FEB 24, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 4.0 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.3198E 04 UW CM**-2SR**-1

I (ACGIH) = 0.7760E-09 W CM**-2

TIME (ACGIH) = 0.3866E+07 SECONDS

REMARKS:

FLUORESCENT LAMP USED FOR SPECIAL PURPOSE
Output from central 10-inch section was measured.

SAMPLE NUMBER: 0066

TIME OF DAY: 1952

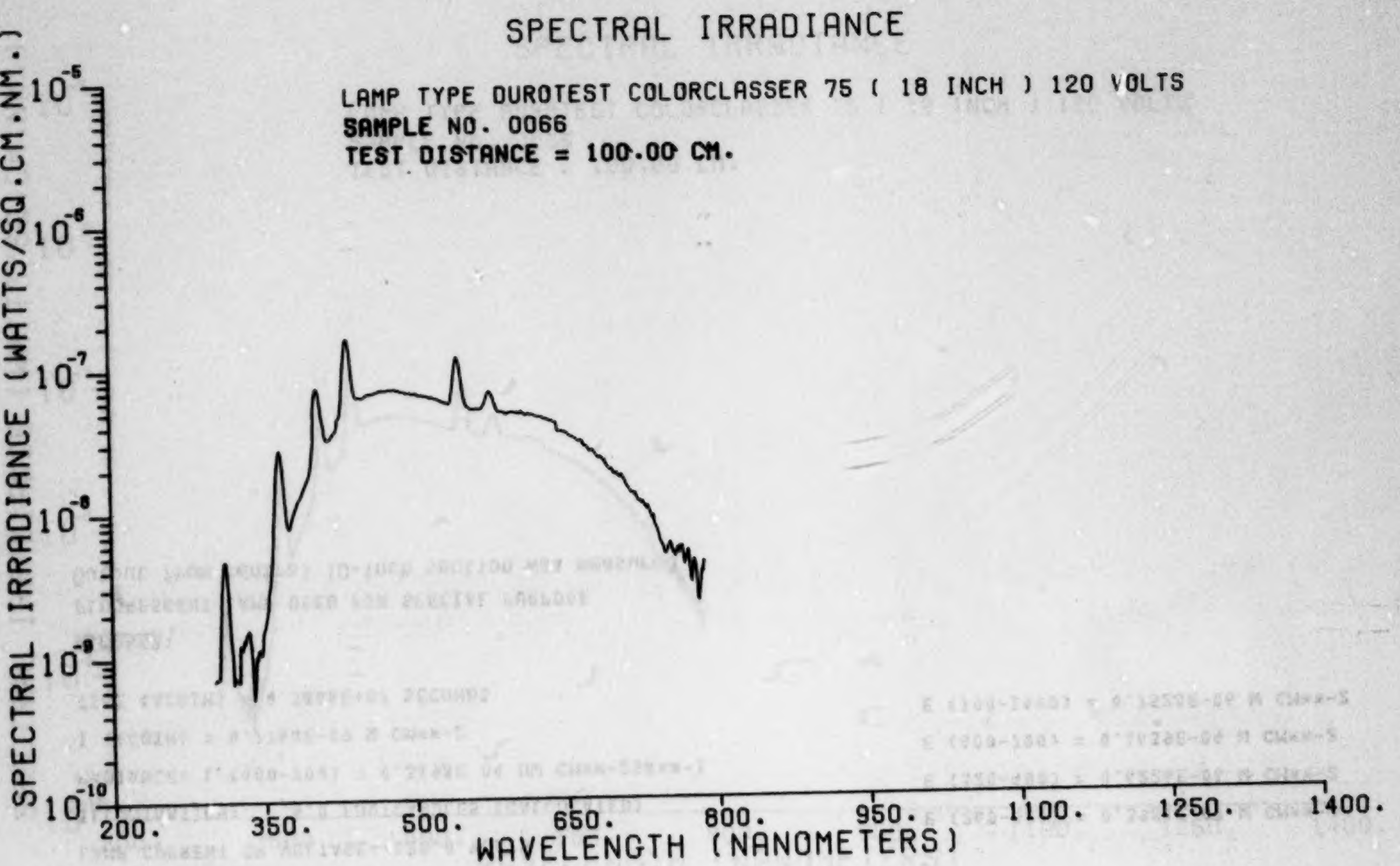
IRRADIANCES:

E (260-320) = 0.3981E-07 W CM**-2

E (320-400) = 0.6226E-06 W CM**-2

E (400-700) = 0.1639E-04 W CM**-2

E (700-1400) = 0.7528E-06 W CM**-2



SPECTRAL IRRADIANCE
LAMP TYPE DUROTEST COLORCLASSER 75 (18 INCH) 120 VOLTS
SAMPLE NO. 0066
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-5
10^-6
10^-7
10^-8
10^-9
10^-10
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: F15T8 BLK. LIGHT BLUE

DATE TESTED: FEB 27, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 0.0 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.5651E 02 UW CM**-2SR**-1

I (ACGIH) = 0.4562E-09 W CM**-2

TIME (ACGIH) = 0.6576E+07 SECONDS

SAMPLE NUMBER: 0121

TIME OF DAY: 1422

IRRADIANCES:

E (260-320) = 0.9416E-07 W CM**-2

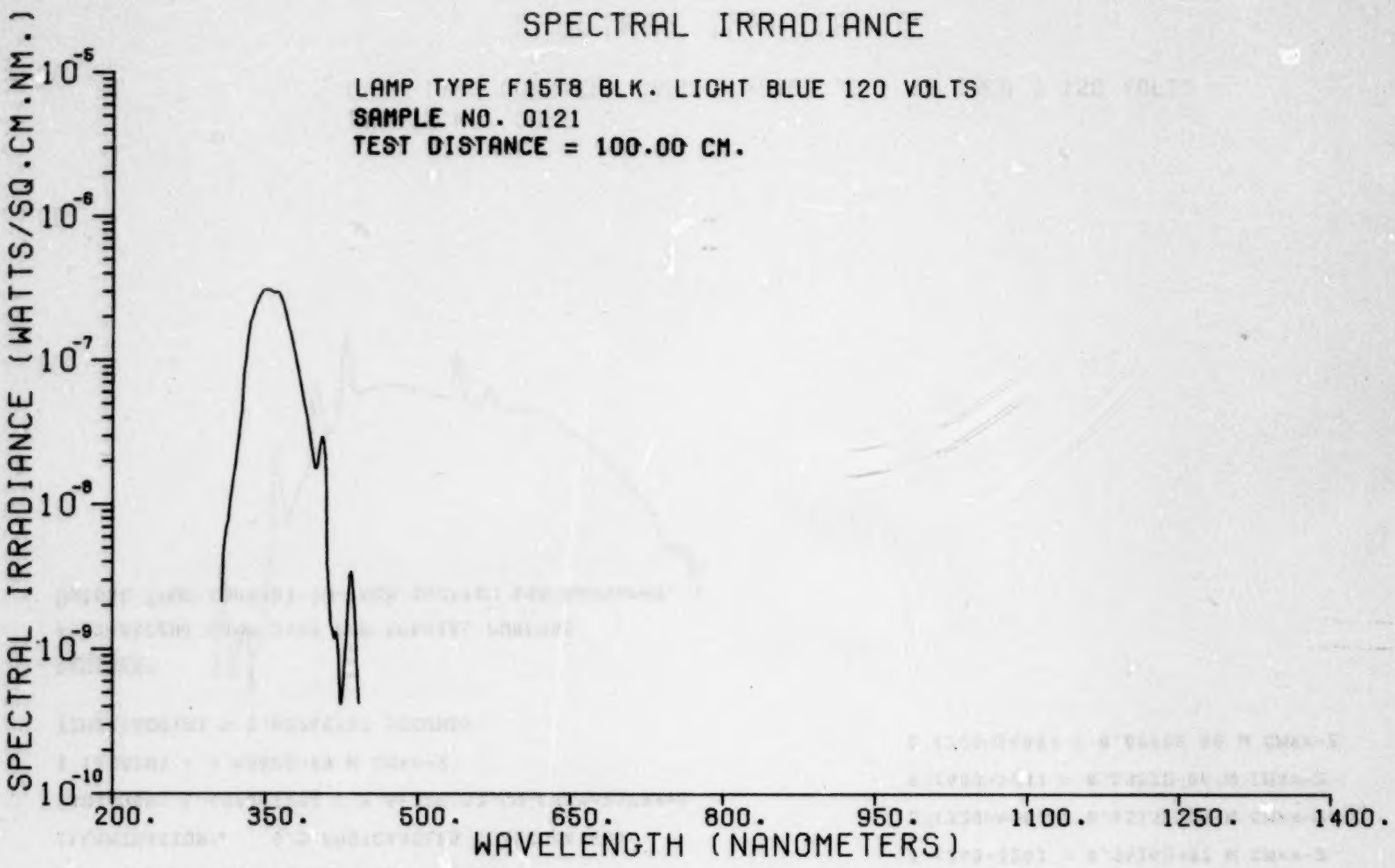
E (320-400) = 0.1313E-04 W CM**-2

E (400-700) = 0.2987E-06 W CM**-2

E (700-1400) = 0.0000E 00 W CM**-2

REMARKS:

FLUORESCENT LAMP USED FOR SPECIAL PURPOSE
Output from central 10-inch section was measured.


SPECTRAL IRRADIANCE
LAMP TYPE F15T8 BLK. LIGHT BLUE 120 VOLTS
SAMPLE NO. 0121
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10-5
10-6
10-7
10-8
10-9
10-10
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: F15T8BLB

DATE TESTED: FEB 27, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 0.0 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.5533E 02 UW CM**-2SR**-1

I (ACGIH) = 0.4937E-09 W CM**-2

TIME (ACGIH) = 0.6077E+07 SECONDS

SAMPLE NUMBER: 0122

TIME OF DAY: 1603

IRRADIANCES:

E (260-320) = 0.7966E-07 W CM**-2

E (320-400) = 0.1039E-04 W CM**-2

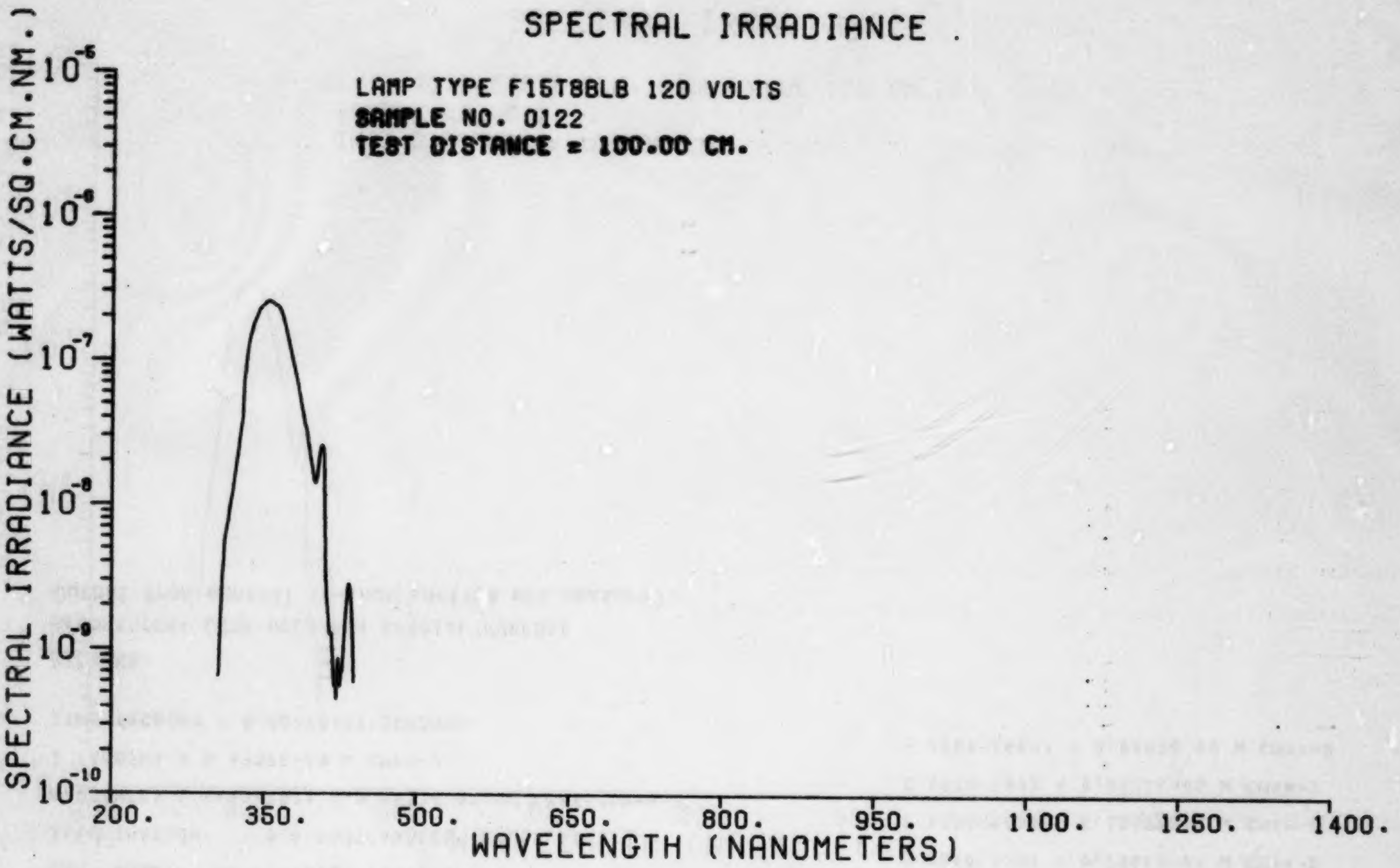
E (400-700) = 0.2421E-06 W CM**-2

E (700-1400) = 0.0000E 00 W CM**-2

REMARKS:

FLUORESCENT LAMP USED FOR SPECIAL PURPOSE

Output from central 10-inch section was measured.


SPECTRAL IRRADIANCE .
LAMP TYPE F15T8BLB 120 VOLTS
SAMPLE NO. 0122
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-5
10^-6
10^-7
10^-8
10^-9
10^-10
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: F15T8BLB

DATE TESTED: FEB 27, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 0.0 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.5580E 02 UW CM**-2SR**-1

I (ACGIH) = 0.4748E-09 W CM**-2

TIME (ACGIH) = 0.6318E+07 SECONDS

SAMPLE NUMBER: 0123

TIME OF DAY: 1755

IRRADIANCES:

E (260-320) = 0.8499E-07 W CM**-2

E (320-400) = 0.1158E-04 W CM**-2

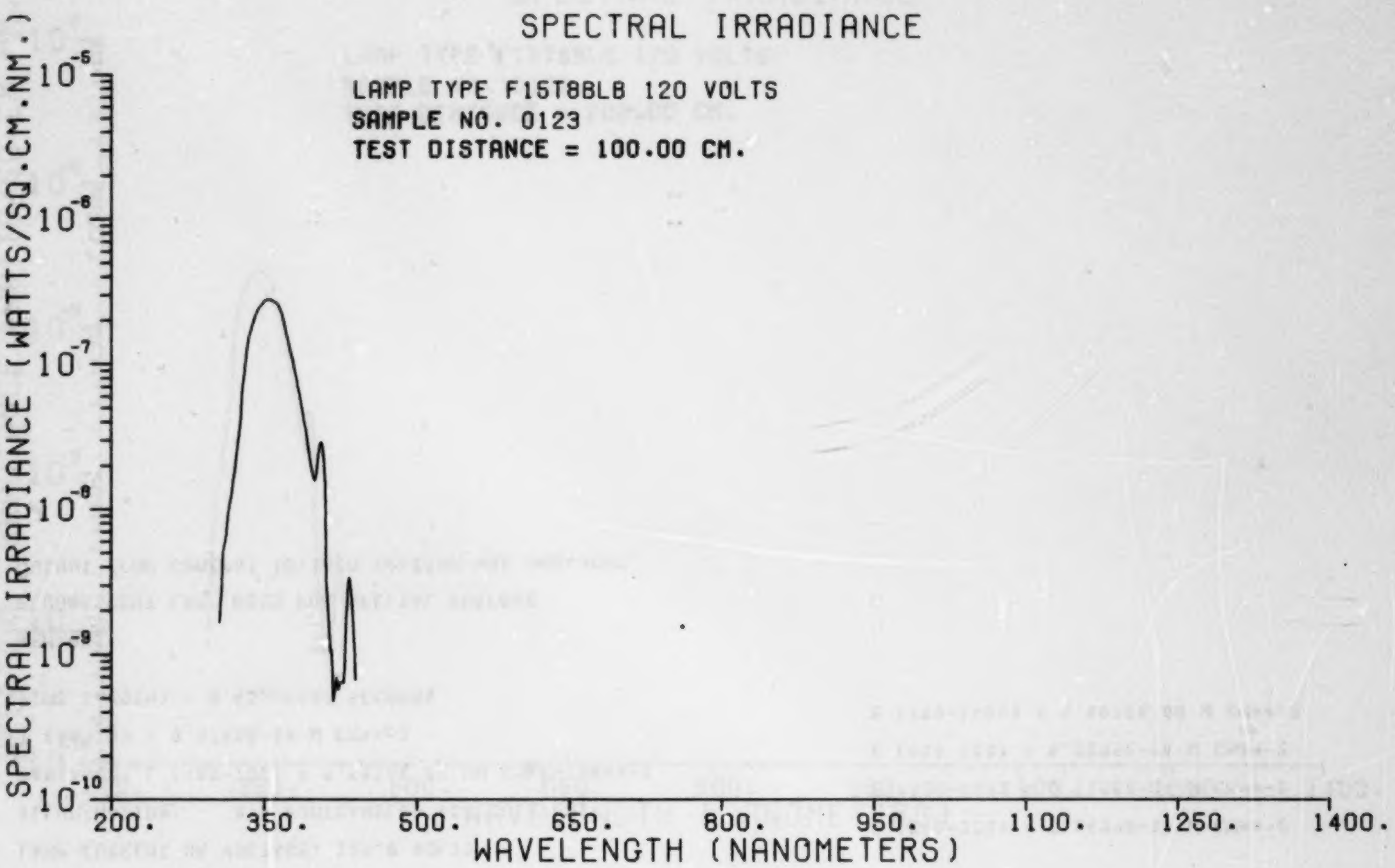
E (400-700) = 0.2895E-06 W CM**-2

E (700-1400) = 0.0000E 00 W CM**-2

REMARKS:

FLUORESCENT LAMP USED FOR SPECIAL PURPOSE

Output from central 10-inch section was measured.


SPECTRAL IRRADIANCE
LAMP TYPE F15T8BLB 120 VOLTS
SAMPLE NO. 0123
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: F40T12/SDB/65W

DATE TESTED: JUL 19, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 1.2 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.5343E 04 UW CM**-2SR**-1

I (ACGIH) = 0.2525E-07 W CM**-2

TIME (ACGIH) = 0.1188E+06 SECONDS

REMARKS:

FLUORESCENT LAMP USED IN PHOTOCOPIERS

Output from central 10-inch section was measured.

SAMPLE NUMBER: 0262

TIME OF DAY: 1120

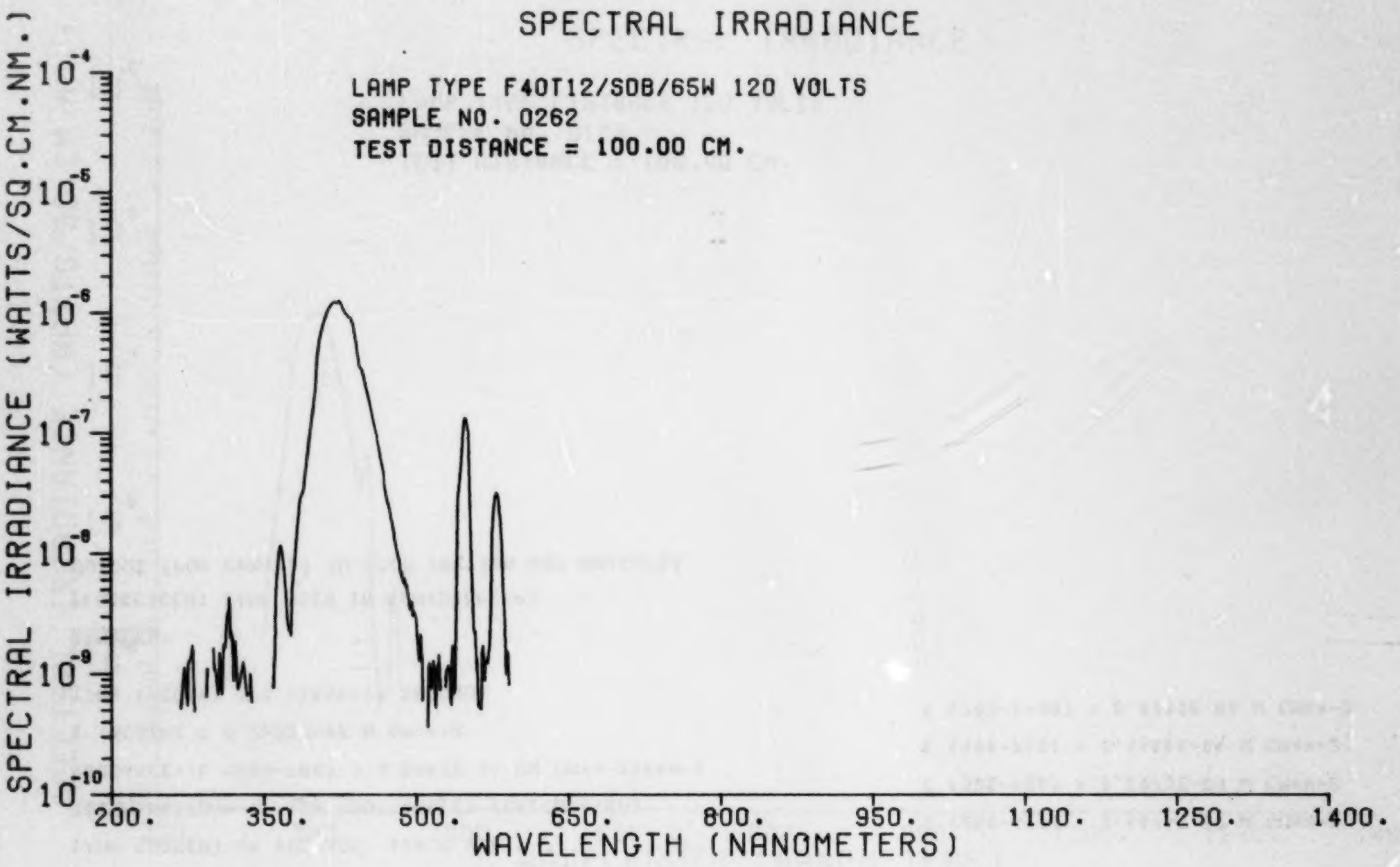
IRRADIANCES:

E (260-320) = 0.6674E-07 W CM**-2

E (320-400) = 0.1073E-05 W CM**-2

E (400-700) = 0.4486E-04 W CM**-2

E (700-1400) = 0.0000E 00 W CM**-2


SPECTRAL IRRADIANCE
LAMP TYPE F40T12/SDB/65W 120 VOLTS
SAMPLE NO. 0262
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-4
10^-5
10^-6
10^-7
10^-8
10^-9
10^-10
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: F40T12/SDB/65W

DATE TESTED: JUL 19, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 1.1 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.4953E 04 UW CM**-2SR**-1

I (ACGIH) = 0.3072E-07 W CM**-2

TIME (ACGIH) = 0.9767E+05 SECONDS

REMARKS:

FLUORESCENT LAMP USED IN PHOTOCOPIERS

Output from central 10-inch section was measured.

SAMPLE NUMBER: 0263

TIME OF DAY: 1304

IRRADIANCES:

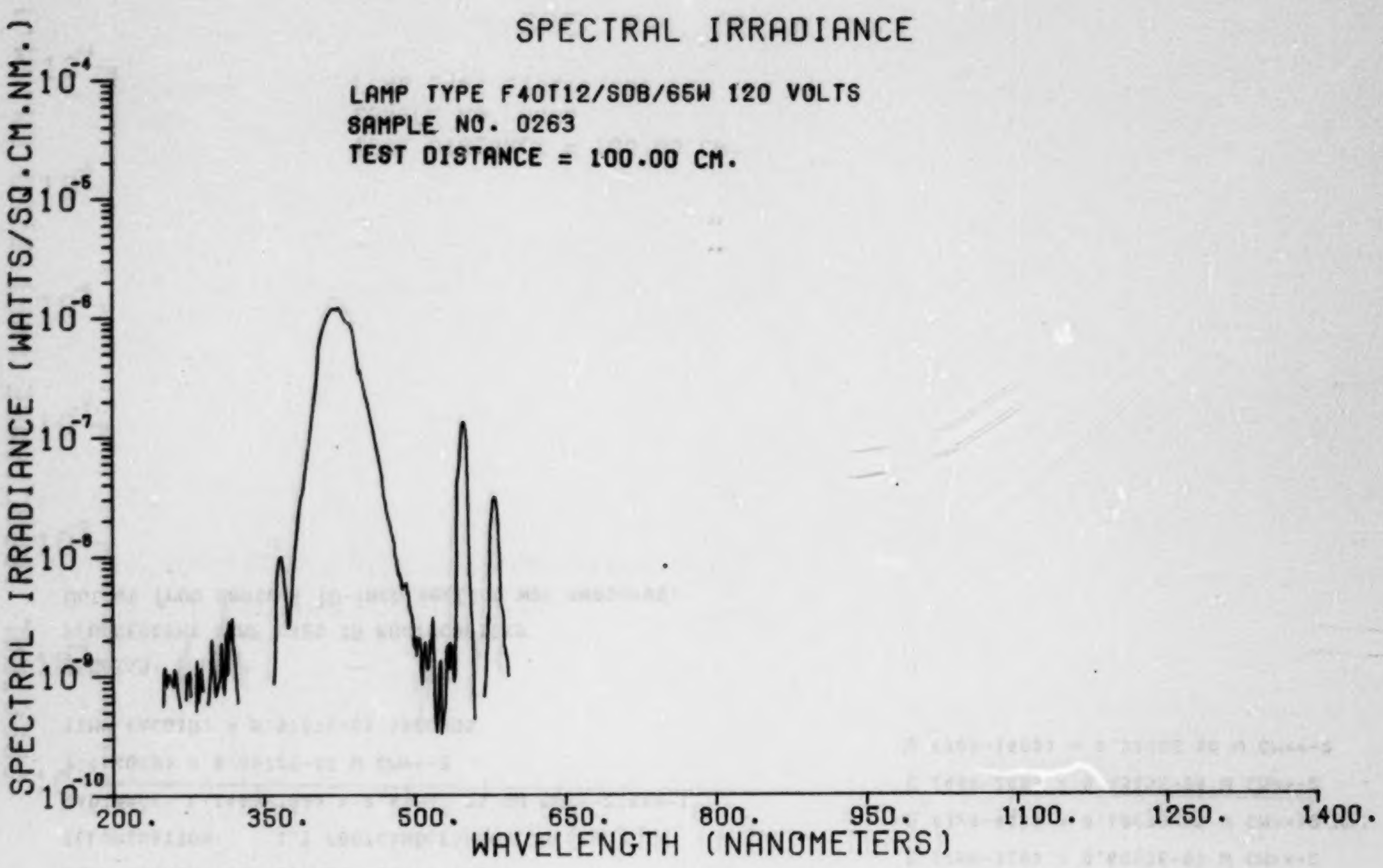
E (200-260) = 0.8813E-08 W CM**-2

E (260-320) = 0.6053E-07 W CM**-2

E (320-400) = 0.1069E-05 W CM**-2

E (400-700) = 0.4315E-04 W CM**-2

E (700-1400) = 0.0000E 00 W CM**-2



SPECTRAL IRRADIANCE
LAMP TYPE F40T12/SDB/65W 120 VOLTS
SAMPLE NO. 0263
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10⁻⁴
10⁻⁵
10⁻⁶
10⁻⁷
10⁻⁸
10⁻⁹
10⁻¹⁰
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: F40T12/SDB/65W

DATE TESTED: JUL 19, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 1.1 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.4952E 04 UW CM**-2SR**-1

I (ACGIH) = 0.2424E-07 W CM**-2

TIME (ACGIH) = 0.1238E+06 SECONDS

REMARKS:

FLUORESCENT LAMP USED IN PHOTOCOPIERS

Output from central 10-inch section was measured.

SAMPLE NUMBER: 0264

TIME OF DAY: 1447

IRRADIANCES:

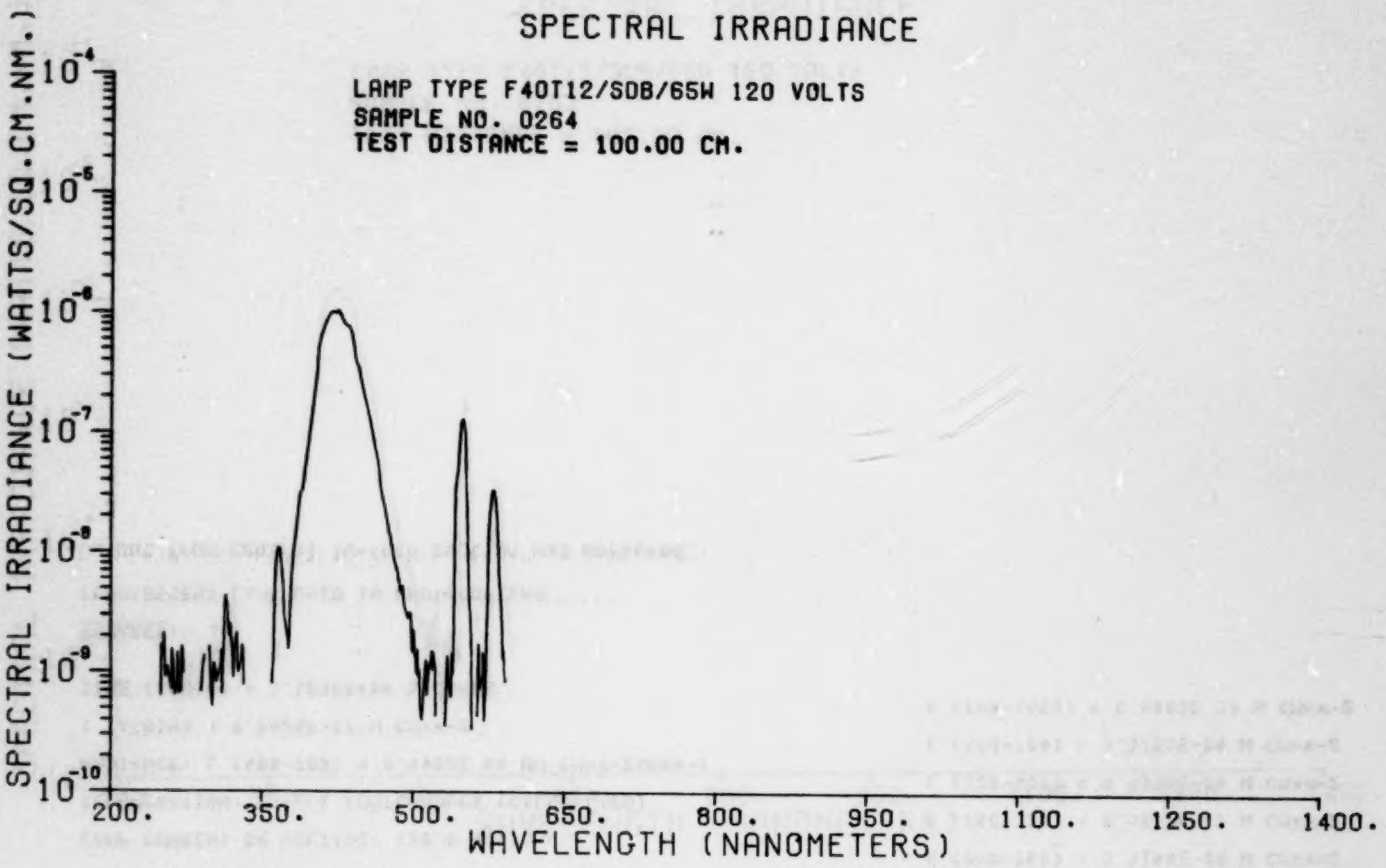
E (200-260) = 0.9144E-08 W CM**-2

E (260-320) = 0.5817E-07 W CM**-2

E (320-400) = 0.9555E-06 W CM**-2

E (400-700) = 0.3758E-04 W CM**-2

E (700-1400) = 0.0000E 00 W CM**-2


SPECTRAL IRRADIANCE
LAMP TYPE F40T12/SDB/65W 120 VOLTS
SAMPLE NO. 0264
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-4
10^-5
10^-6
10^-7
10^-8
10^-9
10^-10
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: F40CW/RS/WM

DATE TESTED: JUL 22, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 5.7 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1774E 04 UW CM**-2SR**-1

I (ACGIH) = 0.2652E-07 W CM**-2

TIME (ACGIH) = 0.1131E+06 SECONDS

SAMPLE NUMBER: 0292

TIME OF DAY: 1211

IRRADIANCES:

E (200-260) = 0.3412E-09 W CM**-2

E (260-320) = 0.1240E-06 W CM**-2

E (320-400) = 0.6391E-06 W CM**-2

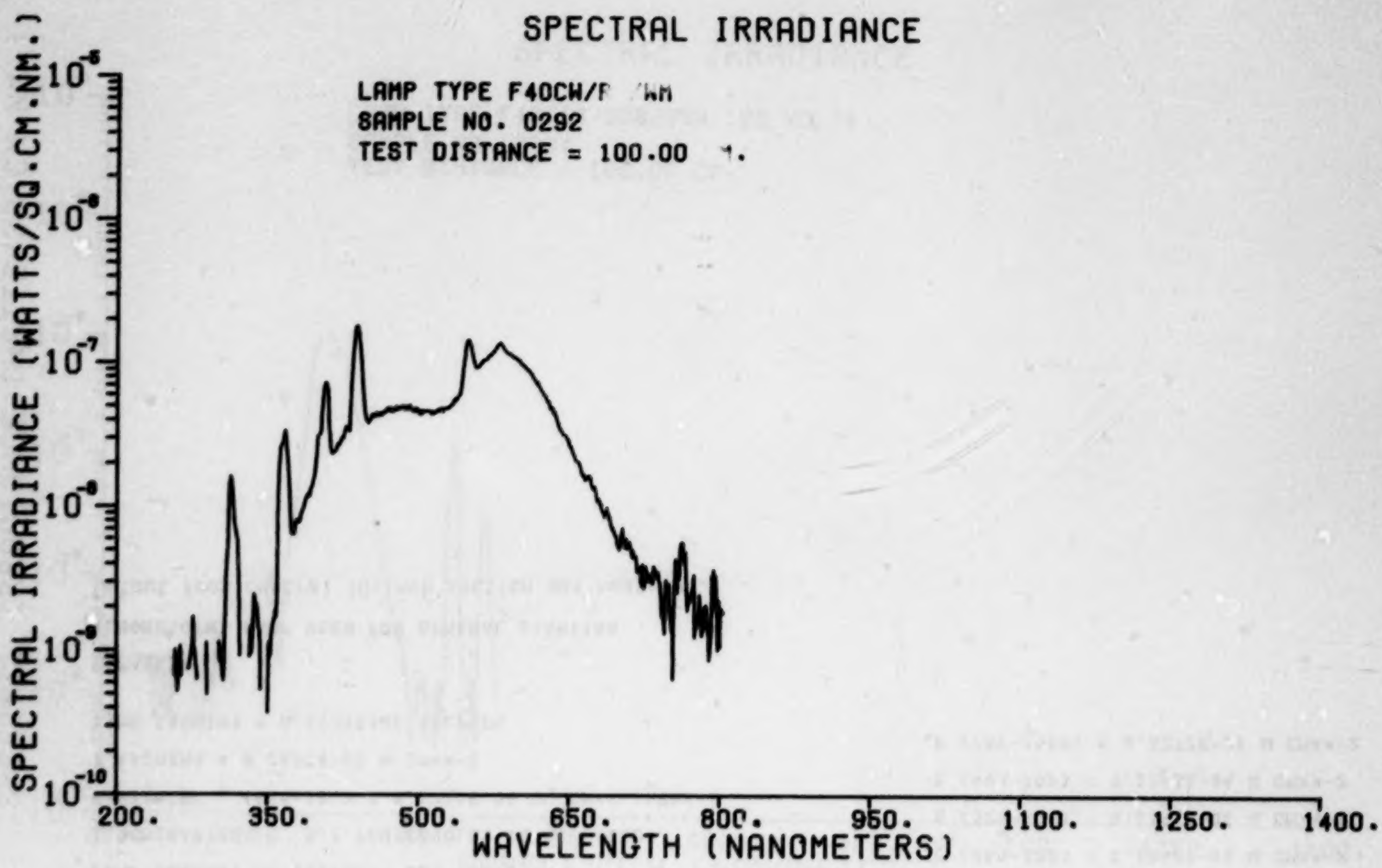
E (400-700) = 0.1773E-04 W CM**-2

E (700-1400) = 0.3272E-06 W CM**-2

REMARKS:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING

Output from central 10-inch section was measured.



SPECTRAL IRRADIANCE
LAMP TYPE F40CW/F WM
SAMPLE NO. 0292
TEST DISTANCE = 100.00
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
WAVELENGTH (NANOMETERS)
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.

LAMP TYPE: F40CW/RS/WM

DATE TESTED: JUL 22, 1978

AMBIENT TEMPERATURE: 77.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 5.2 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1586E 04 UW CM**-2SR**-1

I (ACGIH) = 0.2412E-07 W CM**-2

TIME (ACGIH) = 0.1244E+06 SECONDS

SAMPLE NUMBER: 0293

TIME OF DAY: 901

IRRADIANCES:

E (260-320) = 0.1629E-06 W CM**-2

E (320-400) = 0.5057E-06 W CM**-2

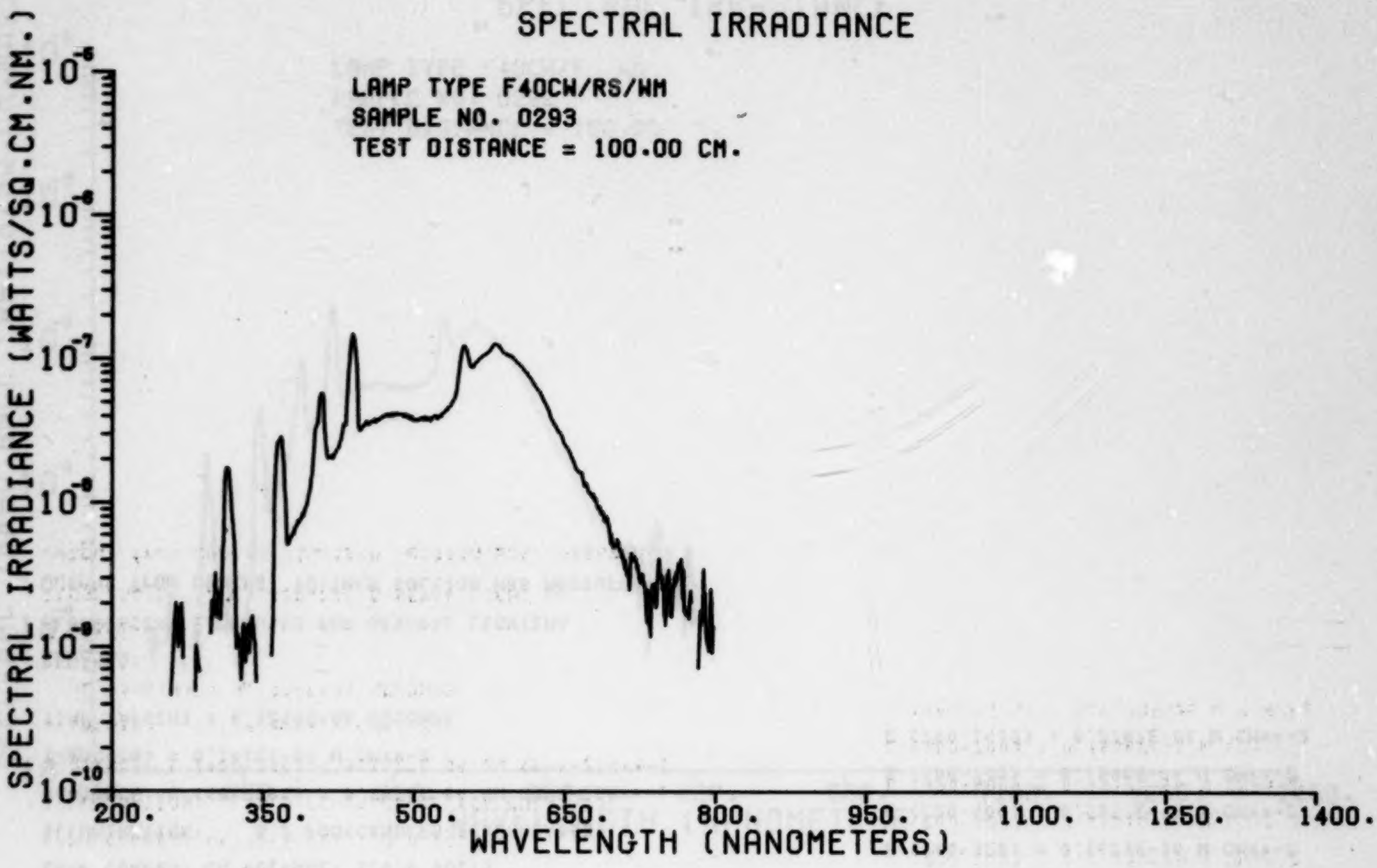
E (400-700) = 0.1590E-04 W CM**-2

E (700-1400) = 0.2787E-06 W CM**-2

REMARKS:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING

Output from central 10-inch section was measured.


SPECTRAL IRRADIANCE
LAMP TYPE F40CW/RS/WM
SAMPLE NO. 0293
TEST DISTANCE = 100.00 CM.
SPECTRAL IRRADIANCE (WATTS/SQ.CM.NM.)
10^-5
10^-6
10^-7
10^-8
10^-9
10^-10
200.
350.
500.
650.
800.
950.
1100.
1250.
1400.
WAVELENGTH (NANOMETERS)

LAMP TYPE: F40CW/RS/WM

DATE TESTED: JUL 22, 1978

AMBIENT TEMPERATURE: 78.0 DEGREES FAHRENHEIT

TEST DISTANCE: 100.00 CM.

LAMP CURRENT OR VOLTAGE: 120.0 VOLTS

ILLUMINATION: 5.5 FOOTCANDLES (CALCULATED)

RADIANCE: L (400-700) = 0.1622E 04 UW CM**-2SR**-1

I (ACGIH) = 0.1501E-07 W CM**-2

TIME (ACGIH) = 0.1999E+06 SECONDS

SAMPLE NUMBER: 0294

TIME OF DAY: 1038

IRRADIANCES:

E (200-260) = 0.2189E-08 W CM**-2

E (260-320) = 0.1481E-06 W CM**-2

E (320-400) = 0.4972E-06 W CM**-2

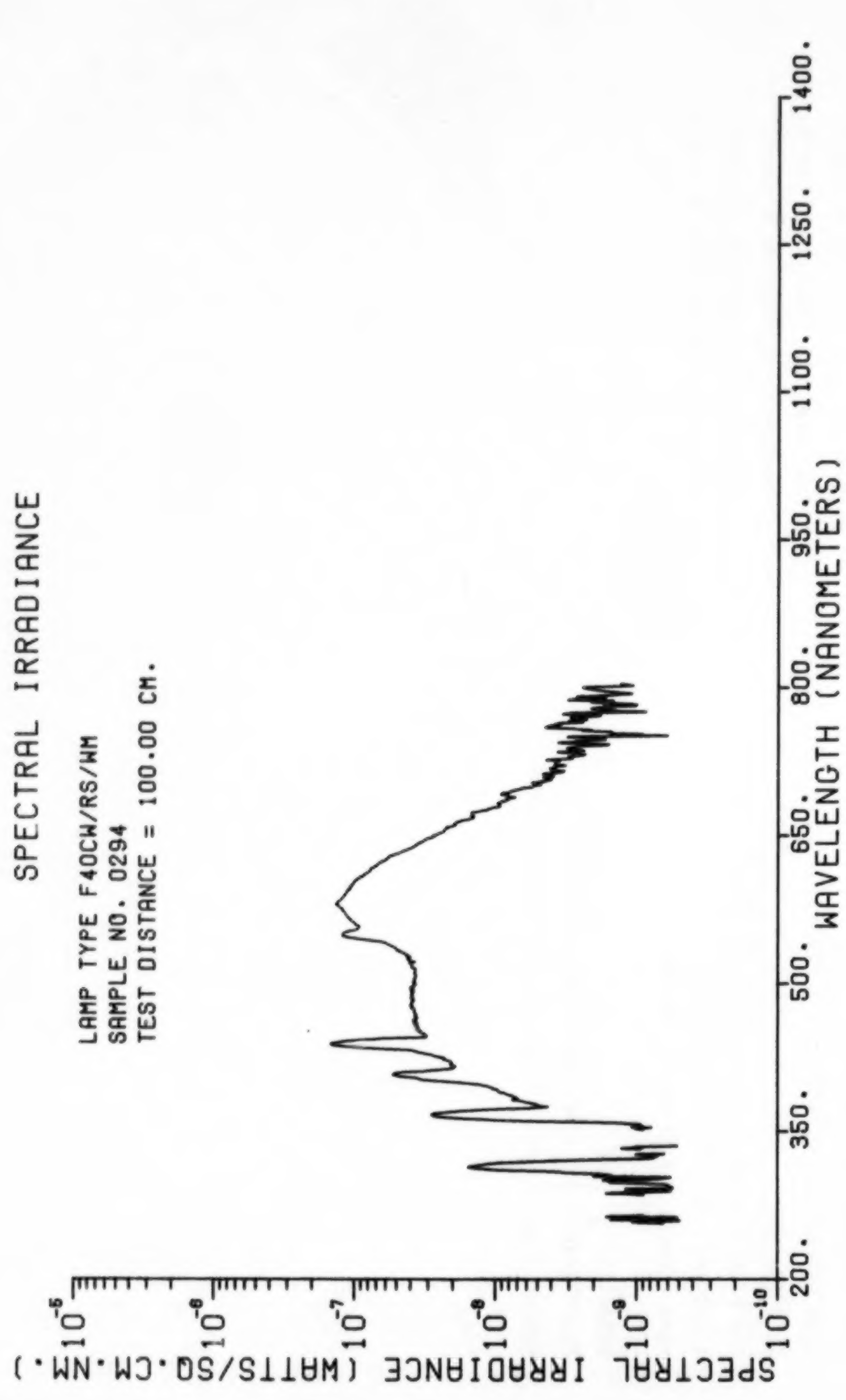
E (400-700) = 0.1636E-04 W CM**-2

E (700-1400) = 0.2872E-06 W CM**-2

REMARKS:

FLUORESCENT LAMP USED FOR GENERAL LIGHTING

Output from central 10-inch section was measured.



*U.S. GOVERNMENT PRINTING OFFICE : 1980 0-341-177/7

FDA 80-8034 Report of State and Local Radiological Health Programs, Fiscal Year 1978 (PB 80-130867, $6.00).

FDA 80-8035 Regulations for the Administration and Enforcement of The Radiation Control for Health and Safety Act of 1968 (July 1980) (GPO 017-015-00173-3, $3.75) (supersedes FDA 79-8035).

FDA 80-8057 Nationwide Evaluation of X-Ray Trends: Dental X-Ray Data (brochure) (supersedes FDA 78-8057).

FDA 80-8070 Bureau of Radiological Health Publications Subject Index (supersedes FDA 80-8070, October 1979).

FDA 80-8092 Biological Bases for and Other Aspects of a Performance Standard for Laser Products (PB 80-128648, $6.00).

FDA 80-8095 Quality Assurance for Fluoroscopic X-Ray Units and Associated Equipment (PB 80-129778, $8.00).

FDA 80-8096 Quality Assurance for Conventional Tomographic X-Ray Units (PB 80-128838, $7.00).

FDA 80-8100 Implementation of a Quality Assurance Program for Ultrasound B-Scanners (PB 80-138340, $6.00).

FDA 80-8101 Ionization Chamber Smoke Detector Meeting (PB 80-128705, $7.00).

FDA 80-8102 Inexpensive Microwave Survey Instruments: An Evaluation (PB 80-114028, $5.00).

FDA 80-8103 Analysis of Some Laser Light Show Effects for Classification Purposes (PB 80-131576, $5.00).

FDA 80-8104 The Selection of Patients for X-Ray Examinations (GPO 017-012-00285-4, $3.50) (PB 80-157431, mf only).

FDA 80-8105 X Rays: So You Want To Be In Pictures? (Bookmark).

FDA 80-8106 An Evaluation of Microwave Emissions from Sensormatic Electronic Security Systems (PB 80-155385, $5.00).

FDA 80-8107 Quantitative Analysis of the Reduction in Organ Dose in Diagnostic Radiology by Means of Entrance Exposure Guidelines (GPO 017-015-00164-4, $1.75) (PB 80-174956, mf only).

FDA 80-8108 Positive Beam Limitation Effectiveness Evaluation (GPO 017-015-00163-6, $2.00) (PB 80-166937, mf only).

FDA 80-8109 Proceedings of a Workshop on Thermal Physiology (PB 80-187867, $8.00).

FDA 80-8110 Quality Assurance Programs for Diagnostic Radiology Facilities (GPO 017-015-00166-1, $2.50) (PB 80-183338, mf only).

FDA 80-8116 Chest X-Ray Screening Practices: An Annotated Bibliography (GPO 017-015-00167-9, $3.50) (PB 80-183890, mf only).

FDA 80-8117 X Radiation and the Human Fetus - A Bibliography (PB 80-157712, $15.00).

FDA 80-8118 A Word of Caution on Tanning Booths (brochure).

FDA 80-8119 Measurements of Emission Levels During Microwave and Shortwave Diathermy Treatments (GPO 017-015-00168-7, $1.75) (PB 80-194772, mf only).

FDA 80-8120 Microwave Oven Radiation (brochure) (supersedes FDA 79-8058).

FDA 80-8121 Laser Light Shows Safety - Who's Responsible? (brochure).

FDA 80-8122 Microwave Hazard Instruments: An Evaluation of the Narda 8100, Holaday HI-1500, and Simpson 380M.

FDA 80-8123 Guide for the Filing of Annual Reports for X-Ray Components and Systems.

FDA 80-8124 Optimization of Chest Radiography - Proceedings of a Symposium Held in Madison, Wisconsin, April 30-May 2, 1979 (GPO 017-015-00176-8, $7.50).

FDA 80-8125 Research Into the Biological Effects of Ionizing Radiation in The Bureau of Radiological Health (GPO 017-015-00172-5, $4.00).

FDA 80-8126 Symposium on Biological Effects, Imaging Techniques, and Dosimetry of Ionizing Radiations (July 1980) (GPO 017-015-00175-0, $8.00).

FDA 80-8127 Guide for the Filing of Annual Reports (21 CFR Subchapter J, Section 1002.11).

FDA 80-8128 The Selection of Patients for X-ray Examinations: The Pelvimetry Examination (GPO 017-015-00174-1, $2.00).

FDA 80-8129 Possible Genetic Damage from Diagnostic X Irradiation: A Review.

FDA 80-8130 Nationwide Survey of Cobalt-60 Teletherapy: Final Report.

FDA 80-8131 Vignettes of Early Radiation Workers: A Videotape Series (flyer).

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ADDENDUM TO:

OPTICAL RADIATION EMISSIONS FROM SELECTED SOURCES:

PART I - QUARTZ HALOGEN AND FLUORESCENT LAMPS

HHS Publication FDA 81-8136, October 1981

PUBLICATION FOR SALE BY: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, Stock Number 017-015-00177-6, and National Technical Information Service, Springfield, Virginia 22161, order by number PB 81-139693.

The attached index was omitted from the original publication. Please include it in your copy of the report.

Roger H. Schneider
Director
Division of Electronic Products
Bureau of Radiological Health

July 10, 1981

HE20.4102:

This addendum is an index for the publication "Optical Radiation Emissions from Selected Sources: Part I- Quartz Halogen and Fluorescent Lamps," HHS Publication FDA 81-8136,October 1980. Lamps are listed by ANSI classification. Each entry also contains information as to a lamps use and power.

The lamp use codes are as follows:

A--Stage and Studio Lighting
B--Movie Light
C--Flood Lamp
D--Spot Light
E--Photocopier Lamp
F--General Lighting
G--Special Use

Lamp Type	S/N	Use	Page
Quartz Halogen Lamps			
FCV 1000w	001	A	018
FCV 1000w	002	A	021
FCV 1000w	003	A	024
DSF 1500w	004	A	027
DSF 1500w	005	A	030
DSF 1500w	006	A	033
ECH/EHB 500w	007	A	036
ECH/EHB 500w	008	A	039
ECH/EHB 500w	009	A	042
EGR 750w	010	A	045
EGR 750w	011	A	048
EGR 750w	012	A	051
FCV 1000w	013	A	054
FCV 1000w	014	A	057
FCV 1000w	015	A	060
EER 2000w	016	A	063
EER 2000w	017	A	066
EER 2000w	018	A	069
FAE 550w	025	B	072
FAE 550w	026	B	075
FAE 550w	027	B	078
DXT 1000w	028	C	081
DXT 1000w	029	C	084
DXT 1000w	030	C	087
FFN 1000w	031	D	090

Lamp Type	S/N	Use	Page
FFN 1000w	032	D	093
FFN 1000w	033	D	096
EFX 500w	058	A	099
EFX 500w	059	A	102
EFX 500w	060	A	105
Q1000T3/CL	109	E	108
Q1000T3/CL	110	E	111
Q1000T3/CL	111	E	114
BRH 1000w	112	E	117
BRH 1000w	113	E	120
BRH 1000w	114	E	123
BCK 500w	115	E	126
BCK 500w	116	E	129
BCK 500w	117	E	132
QH650T3/CL	118	E	135
QH650T3/CL	119	E	138
QH650T3/CL	120	E	141
Q500T2.5/2CL	124	E	144
Q500T2.5/2CL	125	E	147
Q500T2.5/2CL	126	E	150
QH1500T3/1CL	127	E	153
QH1500T3/1CL	128	E	156
QH1500T3/1CL	129	E	159
500T3/7 500w	289	E	162
500T3/7 500w	290	E	165
500T3/7 500w	291	E	168

Fluorescent Lamps

F48T12-CW-HO	034	F	171
F48T12-CW-HO	035	F	173
F48T12-CW-HO	036	F	175
F84T12-CW-HO	037	F	177
F84T12-CW-HO	038	F	179
F84T12-CW-HO	039	F	181
F96PG17-CW	040	F	183
F96PG17-CW	041	F	185
F96PG17-CW	042	F	187
F96T12-CW-1500	043	F	189
F96T12-CW-1500	044	F	191
F96T12-CW-1500	045	F	193
F40T12	049	F	195
F40T12	050	F	197
F40T12	051	F	199
96T12UHO	052	F	201
96T12UHO	053	F	203

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Lamp Type	S/N	Use	Page
96T12UHO	054	F	205
F18T8	064	G	207
F18T8	065	G	209
F18T8	066	G	211
F15T8BLB	121	G	213
F15T8BLB	122	G	215
F15T8BLB	123	G	217
F40T12/SDB/65W	262	E	219
F40T12/SDB/65W	263	E	221
F40T12/SDB/65W	264	E	223
F40CW/RS/WM	292	F	225
F40CW/RS/WM	293	F	227
F40CW/RS/WM	294	F	229

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